ROM

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Magazine *of the* Royal Ontario Museum

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BROTHERHOOD OF WARRIORS: The First Nations/British Alliance in the War of 1812 / **FAMOUS FIRST WORDS:** Illuminating ancient Egyptian hieroglyphs / **THE OTHER SIDE OF PARADISE:** Revisiting the Lost World / *Plus:* JAMES CHATTO on war fare and **MARK KINGWELL** on cosmic conundra

Display until December 15, 2012

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ROM

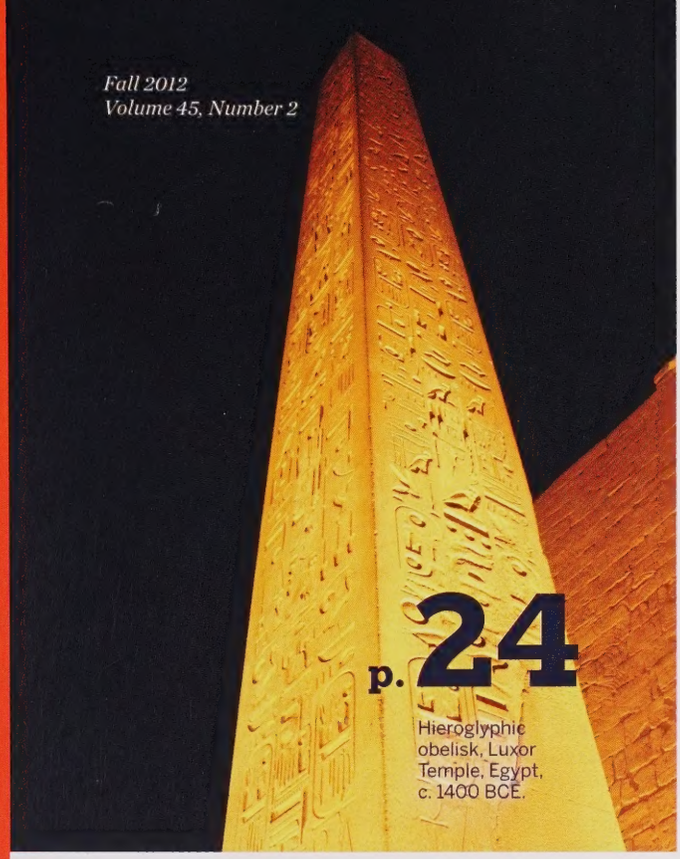
Magazine *of the* Royal Ontario Museum

Mouettes Bowl, William Guérin et Cie, Limoges, France, c.1900–1905. Porcelain with underglaze polychrome painted decoration, silver-gilt mounts. ROM 998.136.182. Gift of Bernard and Sylvia Ostry. From *High Style: Masterworks from the Bernard and Sylvia Ostry Collection in the Royal Ontario Museum*, published by ROM Press.

For more than 40 years, *ROM* magazine and its forerunner, *Rotunda,* have captivated readers and brought the Royal Ontario Museum into their homes. A quarterly publication, *ROM* provides compelling stories of ancient civilizations, fabulous artifacts, ecology, biodiversity, and our place in the cosmos. *ROM* magazine appeals to adventurous and intellectually curious individuals both locally and internationally. It is read in 42 countries. To explore advertising opportunities in *ROM*, please visit www.rom.on.ca/media/pdf/mediakit.pdf or call 416.586.5652. To subscribe to *ROM*, please contact www.rom.on.ca/magazine or call 416.586.5870.

***ROM*, the Magazine of the Royal Ontario Museum**

Fall 2012
Volume 45, Number 2



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Elizabeth Taylor's jewels **p. 6**

Diamond, sapphire, and emerald "dolphin" brooch set in gold and platinum, by Jean Schlumberger, Tiffany & Co. Gift from Richard Burton to Elizabeth Taylor, at premiere of *Night of the Iguana*, August 11, 1964.

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World Cultures (main image): First Nations veterans of the War of 1812, photographed in 1886.
Photo courtesy Woodland Cultural Centre

Natural History: Leaf from sugar maple (*Acer saccharum*).
Photo © Melinda Fawver/Shutterstock

INFORMATION

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Saturday through Thursday: 10 am to 5:30 pm; Friday: 10 am to 8:30 pm

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ADMISSION PRICES
ROM Members: FREE*
Adults: $15
Students and seniors with ID: $13.50
Children (4 to 14 years): $12
Infants 3 and under: FREE

Discount admission on ROM Friday Nights, presented by SunLife Financial, from 4:30 pm to 8:30 pm: Adults $9; Students and seniors with ID $8; Children $6. Feature exhibitions are an additional $10 for adults, $9 for seniors/students, and $5 for children.

Admission is free on Tuesdays for post-secondary Canadian students with ID.

Museum and Arts Pass Program participant.

**All adult Members must present a valid membership card and photo ID. Membership cards are not transferable except for RPC Members.*

Photos: Obelisk by Shutterstock. Gold-mining by Hernán López-Fernández. BioBlitz courtesy Environmental Visual Communication Program, Fleming College. Brooch courtesy Christie's Images Ltd., 2012.

Glen Ellis
EXECUTIVE EDITOR

Glen Ellis, *Tell Her To Make Me a Cambric Shirt*, manages the Royal Ontario Museum Press and ROM magazine. After graduating in English literature from the University of Toronto, he entered the book publishing industry, beginning at the Toronto office of British publisher J. M. Dent & Sons. He has edited two Governor General's Award winners, published a National Business Book Award winner, and at the Museum has supervised a multiple-award-winning publishing program, including the Canadian Museums Association Award for Outstanding Achievement in publishing. He has an interest in literary landscapes and after university toured the settings of Thomas Hardy's Wessex novels. He attributes his interest in English folklore to his Wiltshire and Oxfordshire ancestry. The Wiltshire side of his family came to Toronto in 1832, the Oxford side in 1905.

Gayle Gibson
TEACHER

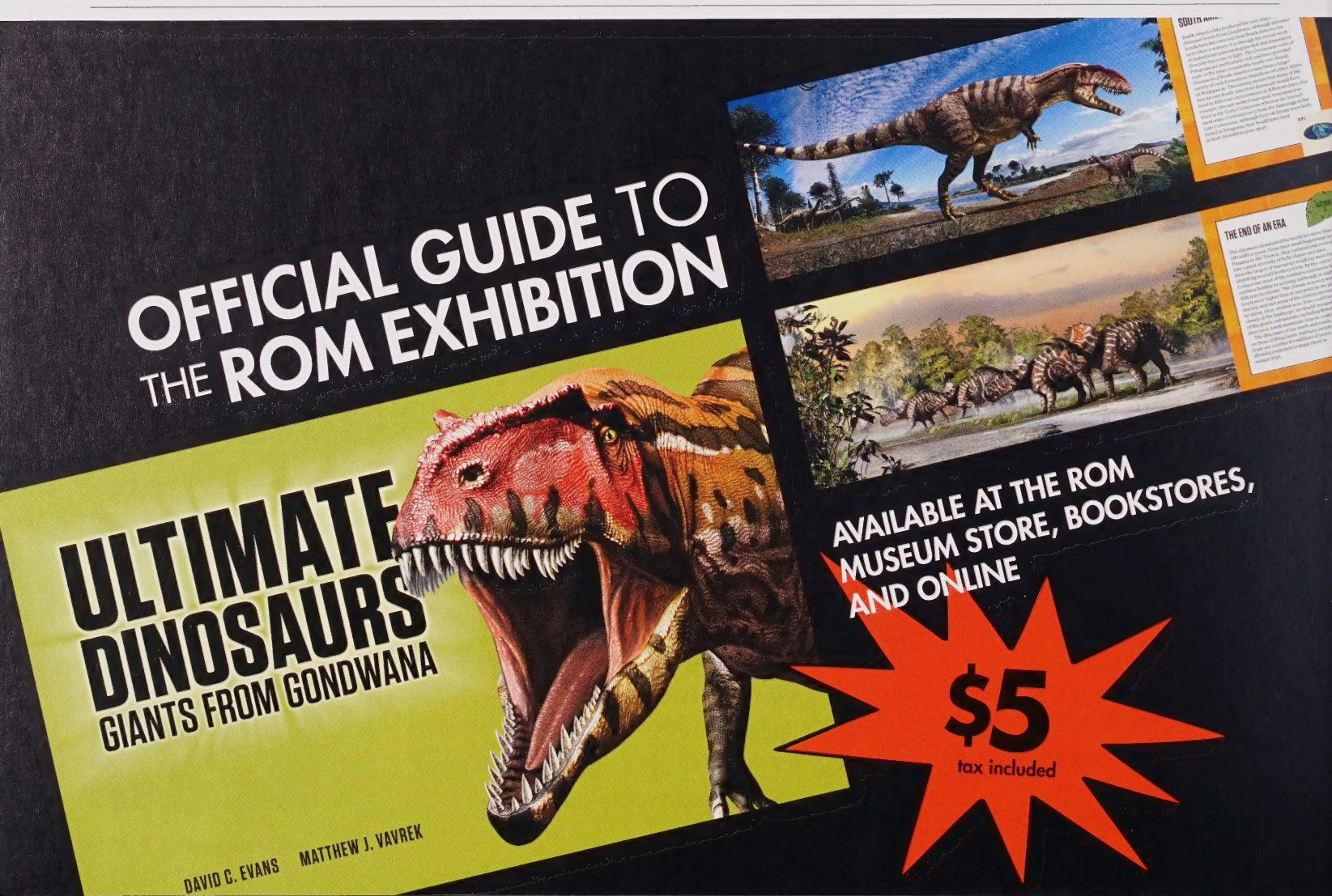
As a child, Gayle Gibson, *Words of the Gods*, an Egyptologist who teaches at the ROM, would take the streetcar to the Museum every Sunday. At first she was afraid of the mummy room, but once she braved it she noticed an index card identifying the gauze-clad occupant of a glass case as a man named Antjau. In that moment, she recognized in the dry remains a fellow human, a friend. She has been studying ancient Egypt ever since. In the course of her career, Gibson has, in her words, "climbed or crawled into every pyramid available, scrambled into tombs, and visited every ancient Egyptian temple I could find." In 2010, she conducted, for the American Research Center in Egypt, seminars and occasional tours of a number of restricted sites. She is a former president of the Society for the Study of Egyptian Antiquities.

Hernán López-Fernández
ASSOCIATE CURATOR

An associate curator in the ROM's Ichthyology section, Hernán López-Fernández, *The Found Fishes of the Lost World,* studies the evolutionary biology of South and Central American cichlid fishes. His fascination with fish began at an early age when his father bought him an aquarium. A few years later, the budding scientist discovered cichlids and decided to dedicate his career to their study. The freshwaters of South and Central America are estimated to harbour well over 7,000 species of fishes, more than any other biogeographic region on Earth. And among that great diversity, cichlids stand out for their morphological, ecological, and behavioural diversity. Hernán's work combines field and laboratory research in systematics, biogeography, and evolutionary biology in an effort to understand the origin of the most diverse freshwater fish fauna on the planet.

Heidi Sobol
CONSERVATOR

Heidi Sobol, *A Little-Known Painting of a Well-Known Chief*, earned her Masters of Art Conservation at Queen's University. As a member of the Canadian Association of Professional Conservators, she has worked at several North American conservation institutions. "John Brant isn't alone in the paintings lab at the ROM," says Sobol. "Alongside this vibrant portrait by an unknown artist, a portrait of his father, Joseph Brant, is undergoing a similar conservation treatment." The lab is typically a snapshot of the diversity of the ROM's painting collection. Sobol and her interns are currently working on Far Eastern export portraits, portrait miniatures, and a fire-damaged painting of a ship. Before coming to the ROM, Sobol operated a private conservation lab in Halifax and taught sessional courses in the department of Art History at the Nova Scotia College of Art and Design.



A Letter from Our Director and CEO

Photo of Janet Carding by George Whiteside

Canada's World Museum

The ROM is Canada's world museum, and Toronto is a great world city of the 21st century, attracting people internationally. It is a powerful combination. Migration to Toronto accelerated after World War II; the area's First Nations and British peoples were joined by European immigration and later by an influx from South Asia, China, the West Indies, Africa, the Philippines, the Middle East, West Asia, Korea, Japan, Russia, and more, making the city a microcosm of the world, and truly a global village.

Potential migrants to Toronto are attracted by the city's economic and educational opportunities, its reputation as a haven from strife and oppression, its celebration of diversity, and its rich offerings of arts and entertainment.

The Royal Ontario Museum mirrors the city's rich cultural diversity. Our spectacular permanent galleries, on the World Cultures front, take visitors into ancient lands where they experience, for example, the beginnings of the world's first true alphabet, from Phoenicia; exquisite temple wall paintings from Yuan dynasty China; a Japanese Samurai warrior suit of armour; a sculpture of the bejewelled celestial maiden Surasundari, embodiment of eternal femininity, from 10th-century India; a 1905 cast of the Punt Wall, associated with ancient Egypt's Queen Hatshepsut; and an array of ceremonial masks, brilliantly coloured robes, evocative ceramics, and figurative sculpture reflecting the cultural traditions of indigenous peoples from Africa, the American continents, the Asia-Pacific region, and Oceania.

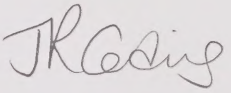
Our exhibitions are equally expressive of the world's peoples. The popular *Dead Sea Scrolls: Words that Changed the World* and *The Warrior Emperor and China's Terracotta Army* drew record crowds and illustrated the interest of ROM visitors in learning about the world.

Our New to Canada Youth Club allows young teens from diverse nations to practice their ESL skills or just "chill" in an international milieu. Our cultural heritage days celebrate world cultures through live musical and dance performances, new film screenings, author readings, and lectures by popular speakers associated with specific cultures.

The ROM is also an inclusive museum. We are a leader in making our exhibits, programs, lectures, screenings, restaurants, and shops accessible to those who may be challenged by vision or mobility issues. We have significantly lowered our admission prices across the board. Our exhibition souvenir books are beautiful, authoritative, and amazing value at $5, tax included!

Since 2008, the ROM's Community Access Network (ROMCAN) has made possible free Museum visits to a wide range of communities and individuals who may not otherwise be able to visit for a variety of reasons. To provide 75,000 free tickets annually, we strategically partner with agencies best positioned to reach individuals and families who can benefit most, including the United Way, The Hospital for Sick Children (SickKids), the YMCA, and the YWCA. We also partner with the Institute for Canadian Citizenship to provide ROM admission to new Canadians during citizenship ceremonies each month through its Cultural Access Pass (CAP) program. We reflect the global mosaic.

So come to the ROM—and see the world.



JANET CARDING
DIRECTOR AND CEO

ROM Royal Ontario Museum

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Magazine of the Royal Ontario Museum

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Exhibitions and gallery openings

Chief's coat, presented to Chief Oshawana, Anishinaabe, for his services as a British ally in the War of 1812.

In the Spotlight

Ongoing Exhibition
Daphne Cockwell Gallery of Canada: First Peoples, Hilary and Galen Weston Wing, Level 1

Sovereign Allies/Living Cultures: First Nations of the Great Lakes

Sovereign Allies/Living Cultures explores First Nations perspectives on sovereignty and identity from the time of the War of 1812 to the present. Video presentations augment the exhibition's nearly 100 artifacts, drawn from the ROM's collections.

Until February 3, 2013 **New Exhibition**
Herman Herzog Levy Gallery, Philosophers' Walk Wing, Level 1

NEW

Small Skills, Special Effects

Rare and distinctive Chinese artifacts are showcased in *Small Skills, Special Effects: Unusual Chinese Works of Art*, which includes items from the ROM's Far Eastern and Textile and Costume collections, loans from three private collections, and an item from the Cheng Yu Tung East Asian Library, University of Toronto. Consisting of 71 objects dating from the Tang dynasty (618–907) to the early 21st century, the exhibit includes a range of rare or never previously displayed objects such as paintings, fans, vessels, snuff bottles, items of personal adornment, and amulets.

Manchu woman's headdress, China, Qing dynasty, late 19th century.

Until Monday, October 8, 2012 **New Exhibition**
Special Exhibitions Gallery, Centre Block, Level 3

NEW

Jorinde Voigt: Beethoven 1–32

Jorinde Voigt, a rising star of Germany's art scene, was commissioned to create a series of 32 drawings in response to Beethoven's 32 Sonatas. These works also responded to the one-day marathon performance of these sonatas by Stewart Goodyear at the 2012 Luminato Festival (June 8–17, 2012). Together, the 32 orginal works provide a distinct visual exploration of the emotive power of Beethoven's music—a "sonata for the eye." The Institute for Contemporary Culture (ICC) at the ROM hosts the inaugural exhibition of these works, open to the public for Scotiabank Nuit Blanche on September 29, 2012.

Jorinde Voigt: Beethoven 1–32 drawings commissioned and produced by Luminato in collaboration with the Institute for Contemporary Culture

LUMINATO

Photos: Coat, ROM 911.3.119, gift of the Independent Order of Foresters. Headdress, ROM 918.21.382, gift of the Robert Simpson Co., Ltd.

September 22, 2012, to March 10, 2013 **New Exhibition**
Roloff Beny Gallery, Michael Lee-Chin Crystal, Level 4

NEW

Observance and Memorial: Photographs from S-21, Cambodia

S-21 prisoner. Identity unknown.

The Institute for Contemporary Culture at the ROM presents *Observance and Memorial: Photographs from S-21, Cambodia*, featuring more than 100 photographic prints developed from original negatives, abandoned by the Khmer Rouge in January 1979, at the S-21 secret prison in Phnom Penh, Cambodia. This important exhibition will be on view until March 10, 2013. It poignantly tells visitors about the tragic mass killings that occurred under the Khmer Rouge regime and how modern Cambodia is recovering from the trauma of these events that happened more than 30 years ago.

Ongoing Exhibition
Wilson Family Exhibition Room, Sigmund Samuel Gallery of Canada, Weston Family Wing, Level 1

Afterimage:
Tod Ainslie's Vision of the War of 1812

In commemoration of the bicentennial of the War of 1812, the ROM presents *Afterimage: Tod Ainslie's Vision of the War of 1812.* These 22 evocative photographs, documenting many of the War's historically significant sites, were taken between 2001 and 2009 by Burlington-based Tod Ainslie using three pinhole cameras that he designed and built.

Pathway between Gate of the Five Nations and South Redoubt, Fort Niagara, Youngstown, NY.

On Now for a Limited Time
ROM Original Feature Exhibition
Garfield Weston Exhibition Hall, Michael Lee-Chin Crystal, Level B2

Ultimate Dinosaurs: Giants from Gondwana

Forget about the dinosaurs you know—prepare for a whole new breed of beast! On June 23, 2012, the Royal Ontario Museum (ROM) launched the world premiere of *Ultimate Dinosaurs: Giants from Gondwana*, presented by Raymond James Ltd., one of North America's leading full-service investment dealers. On exhibit are some of the largest and most unusual dinosaurs from the Southern Hemisphere. Following its debut run in Toronto, *Ultimate Dinosaurs*, curated, designed, and produced by the ROM, embarks on an international tour.

Austroraptor

Presented by RAYMOND JAMES®

November 2012 **Coming Soon**
Patricia Harris Gallery of Textiles & Costume, Michael Lee-Chin Crystal, Level 4

COMING SOON

BIG

This installation showcases objects that, in one way or another, are BIG: big in size, big in historical significance, big news, created by a big name artist, or, simply, carry a big price tag. Spanning the globe, the exhibition's 40 diverse objects are both historic and contemporary. A feast for the eyes, *BIG* provides a fresh, clever way to explore the ROM's remarkable textiles and costume collections.

Until February 24, 2013 **New Exhibition**
Hilary and Galen Weston Wing, Level 2 and Hyacinth Gloria Chen Crystal Court

NEW

Carnival: From Emancipation to Celebration

Be dazzled by the ROM's *Carnival: From Emancipation to Celebration*, featuring the artistry and historical significance of Carnival, a festival of disruption, emancipation, and freedom. This vibrant display features the costumes and artwork of Brian Mac Farlane, six-time winner of Trinidad and Tobago Carnival's Large Band of the Year. Revel in the lush costumes, photographs, and renderings from the festivals of 2010 to 2012.

Brian Mac Farlane
Annihilation
From
Sanctification . . . In Search Of,
Port of Spain, Trinidad, 2012
© 2012 Brian Mac Farlane

Photos: Cambodia courtesy Tuol Sleng Genocide Museum and Photo Archive Group. Fort Niagara, ROM 2011.95.15, © Tod Ainslie. Illustration of *Austroraptor* by Julius T. Csotonyi. © ROM 2012.

Discoveries, Dispatches, and Discourse

News
Polish Heritage Day

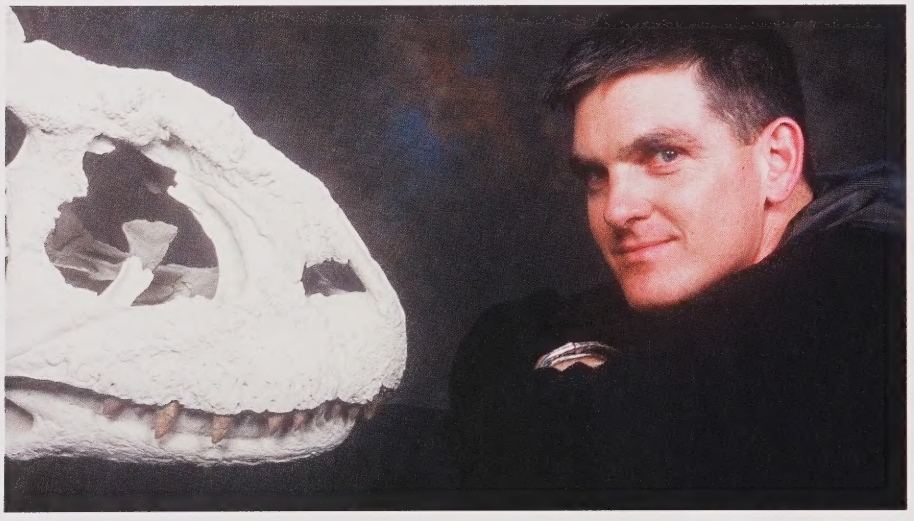
Saturday, November 24, 2012, 10 am to 5 pm
Bring the whole family for a fun-filled day of Polish heritage celebration with live musical performances, traditional crafts and games for kids, guided tours, shopping, dining, and much more!

Lectures
Dinosaur Hunters

What are dinosaur hunters? They are explorers, adventurers, scientists, and kids at heart. The ROM has gathered together the world's foremost palaeontologists for a not-to-be-missed speaker series for the whole family.

Complementing the *Ultimate Dinosaurs* exhibition, the Dinosaur Hunters Speaker Series shines a spotlight on the unique individuals who battle some of the harshest climates and working conditions to discover and dig out of solid rock the oldest creatures ever to have roamed Earth.

This fall, from September to December, six celebrated palaeontologists will descend on the ROM for a lively free meet-and-greet, followed by a family-friendly ticketed talk in the ROM's Signy & Cléophée Eaton Theatre.



Palaeontologist Scott Sampson.

Sunday Afternoons: Cathérine Forster, September 9; Paul Sereno, September 16; Phil Currie, October 7; Scott Sampson, October 21; David Evans, November 25.
Saturday Afternoon: David Krause, December 8. All talks take place 2–3 pm.
Public: $12, Student $10, Child $8
Members: $10, Student $8, Children $6

Admission to the ROM must be purchased to attend the Dinosaur Hunters Speaker Series. Dinosaur Hunter tickets do not include museum admission.
For more information, please visit **rom.on.ca/dinos/events**.

Polish stamp honouring children's author Janusz Korczak (1878–1942).

Lectures
The Jewels of Elizabeth Taylor

Nineteenth Annual Studies in Silver Lecture

Wednesday, November 14, 2012, at 5:45 pm, Bronfman Hall
The Department of Museum Volunteers (DMV) in conjunction with the European section of the Department of World Cultures will be hosting the lecture. Brett Sherlock, senior vice-president and managing director of Christie's Canada, will be lecturing on "The Jewels of Elizabeth Taylor."

Elizabeth Taylor in Las Vegas, Nevada, August 1959.

Photos: Scott Sampson by Jedrzej Borowcz. Stamp, Ray Roper/iStock. Elizabeth Taylor by John Bryson/Time & Life Pictures/Getty Images.

Lectures

Making a Difference: An Evening with Dr. Jane Goodall

Hope for the Future of Planet Earth

Tuesday, September 25, 2012
Location: Samuel Hall ♔ Currelly Gallery
A rare opportunity to hear world-renowned primatologist and UN Messenger of Peace, Dr. Jane Goodall, as she reflects on her research about our closest animal relatives, and the extraordinary changes the world has seen since 1960 when she first began her chimpanzee research in Gombe Stream National Park in Tanzania. She will also discuss the current threats facing the planet, the need for change, and her reasons for hope in these challenging times.
Cocktail Reception with Dr. Goodall 6–7 pm
Public: $150, Members: $135
Lecture 7:30–9 pm
Public: $65, Members: $60
Co-presented by the Jane Goodall Institute of Canada and the Schad Gallery of Biodiversity.

Dr. Goodall with Freud, one of our closest animal relatives.

the Jane Goodall Institute of Canada
FOR WILDLIFE RESEARCH, EDUCATION AND CONSERVATION

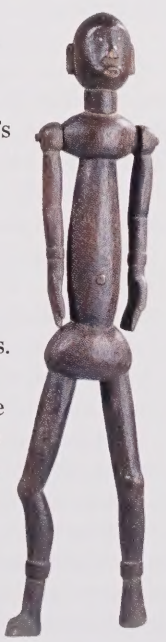
JaneGoodall.ca

New Acquisitions

A Dance Puppet from Tanzania

BY SILVIA FORNI

In 2011 the ROM acquired an outstanding Sukuma dance puppet from Tanzania. This extremely rare figure, exceptional in both size and craftsmanship, was used as an entertainment piece in the Sukuma's annual competitive dance performances. In the competitions, dance societies challenge one another to excite, provoke, and amuse, engaging in a tug of war for the audience's attention. These figural sculptures with movable body parts captivate spectators through dance, often satirizing personality types and specific individuals. Commonly misidentified as ancestor figures or grave markers, the dance puppets help to dispel the myth that there is no figural art in East Africa. This great acquisition, made possible with the generous support of the Louise Hawley Stone Charitable Trust, adds strength and diversity to the ROM's East African collection.

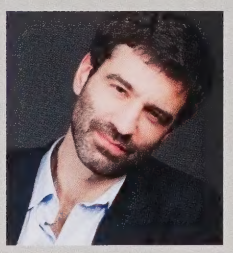


SILVIA FORNI is associate curator in the Anthropology section of the ROM's Department of World Cultures.

Photos: Dr. Jane Goodall by Michael Neugebauer. Sukuma dance puppet, ROM 2011.36.1. Jorn Weisbrodt by Tony Hauser.

ICC

In Conversation



Jorn Weisbrodt, artistic director of Luminato, Toronto's multidisciplinary festival of theatre, dance, music, film, literature, visual arts, and design, brings to the city an international reputation for collaborating on landmark projects with some of the most prestigious arts organizations around the globe, including the Spoleto Festival, the Barbican Centre in London, and the Lincoln Centre Festival. Jorn speaks with Francisco Alvarez, managing director of the ROM's Institute of Contemporary Culture, about the ICC's exhibition *Jorinde Voigt: Beethoven 1–32* (until October 8, 2012).

Francisco Alvarez: What initially attracted you to Jorinde Voigt's work?

Jorn Weisbrodt: Jorinde Voigt's craftsmanship and the complexity of her work are simply stunning. I have always been fascinated by the idea of transferring one art form into another, but with music I have always felt that most visual artists fail or are shy to even attempt such an approach. Her work is like music to the eyes.

FA: Luminato is known primarily as an international performing arts festival. How does this art exhibition fit into your vision for Luminato?

JW: I want to create connections between different art forms and try to encourage collaborations between artists from different disciplines. I think where artists from different disciplines meet are interesting spaces to find something we have not seen or heard before, and new forms might emerge—like opera, which was an invention of a group of scholars, musicians, poets, and scientists who gathered in Florence in the early 17th century and who tried out a new connection between music, words, and the stage.

FA: Jorinde's *Beethoven 1–32* drawings operate on a complex intellectual and logical level, but also exude visceral movement, grace, muscularity, and great variety. Do you agree that their appeal emanates from this interplay of the mind and the eye, and in this case, the ear?

JW: Her Beethoven exploration fits into a small programmatic focus that started with Stewart Goodyear proposing to perform all 32 Beethoven sonatas in one day. That was then augmented by a parallel performance-art piece on stage at Koerner Hall by Melati Suryodarmo, and a talk by Antonio Damasio on the brain and music. It is like unfolding one idea into different dimensions or looking into a prism from different angles.

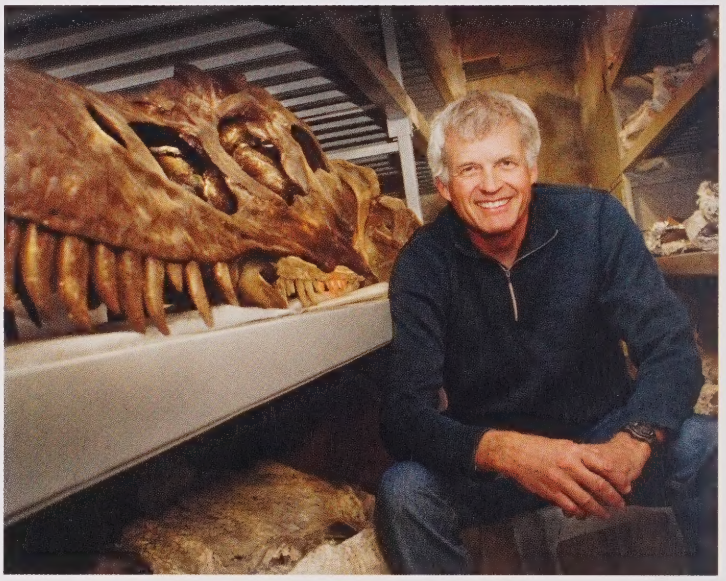
Jorinde's drawings are a feast for the eye and like music they can be enjoyed on a very visceral level but at the same time they can be analyzed. They follow a very clear structure, just like music, where with very few tools, basically with 12 notes, you can create an infinity of expressions. Her forms express an infinite abstract richness derived from very simple mechanisms.

Jorinde Voigt: Beethoven 1–32 drawings commissioned and produced by Luminato in collaboration with the Institute for Contemporary Culture

LUMINATO

On the Shoulders of Giants

First introduced to dinosaurs through a plastic toy in a cereal box, renowned palaeontologist Philip J. Currie embarked on a life-long journey to study these creatures of the past



Last year, he had a museum named after him—the Philip J. Currie Dinosaur Museum in Alberta—and this year he joined the likes of Sir Edmund Hillary and Neil Armstrong as a recipient of The Explorers Club medal. In November, he will be presented with the Royal Canadian Geographical Society's (RCGS) Gold Medal at the Canadian Museum of Civilization. A feature speaker in the ROM's Dinosaur Hunters Speaker Series, Dr. Currie chats with Sheeza Sarfraz of ROM Press about his views on palaeontological research and the future of palaeontology.

Sheeza Sarfraz: There is a lot of excitement at the Museum around your upcoming talk in connection with the *Ultimate Dinosaurs* exhibition. What is the most striking difference between the dinosaurs of Patagonia and their counterparts in the north?

Philip J. Currie: I have always considered myself something of a specialist on the dinosaurs of the Cretaceous of North America (especially Alberta). Early in my career, I discovered that there was a preservational bias in our part of the world; for various reasons, dinosaurs and other animals that weighed less than a hundred kilograms when they died are rarely preserved in our fossil beds.

These preservational biases did not exist in Asia, where I have been working to better understand our own small Canadian dinosaurs. This inevitably led to an interest in researching the intercontinental movements of dinosaurs.

Dinosaurs were still adapting and producing better "models" right up to the K–T extinction event.

The dinosaur faunas of Alberta and the Gobi Desert are very similar because they were able to move back and forth through the Arctic (a fascinating story in itself!). However, the southern continents were long separated physically from the northern ones. For these reasons, the dinosaurs of the northern continents evolved for a long time in isolation from those of the south.

The physical separation of North and South America ended in the Cretaceous, however, and the faunas started to mix. Southern sauropods invaded Texas and adjacent regions, while hadrosaurs from our part of the world reached Patagonia by the end of the Cretaceous. It was the faunal interchange that attracted me to do research in Patagonia. Since 1995, I have taken a team of colleagues and students to Argentina almost every year to work with Rodolfo Coria from the Museo Carmen Funes and his team.

There are many interesting questions concerning the changes that were taking place in Patagonia as the hadrosaurs invaded the south. But I have also become as interested in why some groups did not participate in the faunal exchange. Why, for example, did tyrannosaurs (which were so successful on the northern continents) not move south? I think that it was because there were already carnivores in South America that were as large (or larger than) and as specialized as *Tyrannosaurus rex*.

SS: There used to be a *Troodon* brain case in your office at the Royal Tyrrell Museum 16–17 years back, the case highlighting the fact that *Troodon* was much smarter than the average dinosaur. Had the K-T extinction (Cretaceous–Tertiary extinction) not taken place 65 million years ago, could this dinosaur have evolved into a model of intelligent life?

PC: *Troodon* is still my favourite dinosaur after all these years. Think of it . . . a man-sized dinosaur with a brain six times larger than that of a modern crocodile, huge and forward-facing eyes that gave it three-dimensional vision, hands that were capable of manipulating objects, legs adapted to sprinting at high speeds, and a body covered with feathers like a bird.

Dinosaurs were still adapting and producing better "models" right up to the K–T extinction event, and if their evolution had not been cut off 65 million years ago, they would have continued to change and become more sophisticated. I am not sure where they would have been today, but I am sure that humans would not have inherited the world if we had been competing with the descendants of *Troodon*!

Photo courtesy The Alberta Order of Excellence.

SS: What do you consider to be your greatest find?

PC: I have been very lucky over the years and have made many incredible discoveries. Although I am perhaps best known for my work on theropod dinosaurs (including feathered forms from China) and the origin of birds, my most exciting discovery was of dinosaur eggs and embryos in southern Alberta.

Based on palaeontological and sedimentological evidence, I "predicted" that we would find dinosaur eggs and babies in the Milk River region. And sure enough, when one of my fossil preparators led me to a hillside in Devil's Coulee in 1987, the prediction surpassed my expectations. As we crawled up the rock face picking up eggshell and tiny hadrosaur bones, we finally came to a level where there was a circle of eggshell surrounding a miniature skeleton! The circle was of course an egg that had been sectioned by erosion, and I was looking at an embryo inside the egg. My excitement knew no bounds that day!

One can even make a case that the public kept palaeontology alive during the long semi-arid research period between the Great Depression and the beginning of the Dinosaur Renaissance in the 1970s.

SS: Are there any radical theories that have become generally accepted over your career in palaeontology?

PC: During my career, most of the "radical" theories that were proposed about dinosaurs have become widely accepted (if not proven) by both scientists and the public.

Thomas Huxley had suggested as early as 1868 that dinosaurs were ancestral to birds, but this only became widely accepted with the discovery of feathered dinosaurs in 1996. Feathers on dinosaurs had been proposed in the 1970s, almost a quarter of a century before the first fossilized feathers were found on dinosaurs in China.

Warm-blooded dinosaurs (an idea proposed first at the ROM by Dr. Loris Russell in the 1940s) also became acceptable after feathered dinosaurs were found.

When I started working on bonebeds in Dinosaur Provincial Park in 1978, I met great resistance to the ideas that some dinosaurs moved in enormous herds and were migratory. As new discoveries have piled up in support of herding behaviour, there is now a general acceptance of some dinosaurs' being gregarious (although details are still a source of debate, which is healthy).

SS: What is the new frontier of palaeontology? Will genetic data replace bone morphology as the primary source of data about dinosaurs?

PC: There are two or more developing frontiers in dinosaur research in my opinion. The study of biomechanics in dinosaurs is not new, but tools like CT-scans and computer modelling have transformed these studies into a vibrant field of new discoveries. And although the quest for soft tissues and genetic material in dinosaurs seemed fruitless when *Jurassic Park* was released in 1993, discoveries like those of palaeontologist Dr. Mary Schweitzer have most of us now thinking that the discovery of genetic material in dinosaurs is no longer impossible. I doubt that genetic data will ever replace morphological data for studying dinosaurs, any more so than it has with modern animals. But the two sources of data are complementary and together produce a solid framework of understanding, even though they sometimes produce what at first appear to be contradictory results.

SS: What would be your dream discovery?

PC: I guess I will never give up fieldwork until I find a complete skeleton of *Troodon* in the badlands of Alberta. Teeth are pretty common in some areas, as are isolated bones. We have even recovered partial skulls and skeletons. But because of those preservational biases that I mentioned earlier, we have never found more than a quarter of a complete animal. Will I ever succeed? I don't know, but I came closer in a sense two years ago when I found an equally elusive specimen in Dinosaur Provincial Park—the skeleton of a baby ceratopsid (horned dinosaur)!

SS: How will the palaeontological community try to engage with the general public in the future? Will it be more of the same, or is the science changing so that the output will be different from what people have seen in museum halls for the last 100 years?

PC: The general public has always been intimately engaged with palaeontology (particularly dinosaurs), and one can even make a case that the public kept palaeontology alive during the long semi-arid research period between the Great Depression and the beginning of the Dinosaur Renaissance in the 1970s.

Dr. Philip Currie with former student Robin Sissons on a University of Alberta expedition in the Gobi Desert in Mongolia

Photo by Dr. Phil Bell, courtesy Philip Currie Dinosaur Museum.

Over time there has been an increased level of involvement with the public participating in dinosaur digs and volunteering to prepare fossils in laboratories. In the future, I can even see public involvement increasing in the research itself, perhaps through assisting with online collection of information and data-crunching.

I feel there will always be a need for museum displays, public lectures, and other traditional methods of "getting the word out." Regardless of whether it is seeing a real specimen or hearing a person who wants to share his/her experiences in collecting and researching them, people really need to see and experience the real thing.

SHEEZA SARFRAZ is a researcher/writer at the Royal Ontario Museum Press.

Tell Her To Make Me a Cambric Shirt

Without Any Seam or Needlework

BY GLEN ELLIS

A rare seamless shirt in the ROM's collections appears to resolve a paradox proposed in an ancient English ballad.

One of the more obscure items in my vinyl collection is a recording of what folklorist F. J. Child (1825–1896) called "popular ballads," traditional songs that have persisted through the oral tradition. Collected on tape by Alan Lomax and Peter Kennedy as they toured the British Isles in the 1950s, the lyrics are sometimes compilations, each verse picked up by a different pub elder. On one track, six elders chronicle the fate of cruel Barbara Allen and her story's prickly resolution as the red rose that grew from her grave, and the green briar from her lover's, entwine in a true love knot at the top of a church tower.

Another classic on the album, *Scarborough Fair*, begins with a young man's request of his former lover to make him a cambric shirt, with the condition that it be "without stitch, or seam, or needlework." Sometimes, the shirt is to be made of spiderweb. The girl is then asked to wash it in a parched well, dry it on a hawthorn tree that never bore bud or blossom, and so on, after which she will again be his true love.

As a duet, the song may continue with the maiden's demands of him ("Now, sir, you have questioned me three times three/But I might ask as many as thee"), beginning with her wanting him to buy her an acre of land "between salt water and the sea sand." He may then be required to plough it with a team of mice, sow it with a pepper box, reap it with a sea fowl's quill, or shear it with a sickle of leather, bind it up with a peacock feather, a rope made of heather, or a hummingbird feather, carry it home on the back of a snail, send it to mill on a butterfly's back, then thrash it well in a boardless barn that hangs from the sky by a fine thread of yarn. If her erstwhile beau delivers, the girl promises to make the shirt.

In a regional variation of the lyrics it is said that "every stitch must be finicle work." The archaic *finicle* (excessively delicate in workmanship or elaborate in detail) may now be found online, in *The Urban Dictionary*, to mean "the essence of cool."

To find out if it would be possible to make such a shirt, I consulted ROM Textile and Costume curator Anu Liivandi. o

Detail: Cuff (left) and collar (right) of seamless linen shirt, Scotland, c. 1810, in the ROM's Textile and Costume collections. Ingeniously, the weaver has produced a garment—complete with refinements—entirely on the loom, "without stitch, or seam, or needlework."

And Then He Will Have His Seamless Shirt

BY ANU LIIVANDI

The challenge presented in this ballad seems to have inspired more than one successful attempt to produce a seamless shirt. With careful forethought and preparation of the loom, a skilled weaver could in fact produce something approximating a fashionable shirt, including not only sleeves, collar, and cuffs, but even neck frill, buttons, and buttonholes, all woven in the piece. Although it would require a great deal of extra time and effort, making it impractical as a regular production item, it could serve as a presentation piece to showcase the weaver's skill and ingenuity. For more on this topic, see "Scottish Seamless Shirts," by Martin Norgate and Helen Bennett, in *Costume*, no. 10 (1976), pp. 53–67.

In dealing with another request for information on men's shirts in our collection, I found a reference to a garment in the ROM's collection made in Scotland, c. 1810, in tubular double weave. This was unusual enough to warrant further investigation, and it turned out to be a rare example of just such a seamless shirt woven in a single piece on the loom. It is made of a rather coarse undyed linen, which has more weight and body than the soft and fine linen thread used for cambric, and therefore would have been easier to work with in such an intricate production. o

GLEN ELLIS is executive editor of *ROM* magazine. He also manages the Royal Ontario Museum Press.

ANU LIIVANDI is assistant curator in the Textile and Costume section of the ROM's Department of World Cultures.

Photo: ROM 982.244.1, gift of Mrs. Donald B. Taylor. Illustration by Michael Wandelmaier.

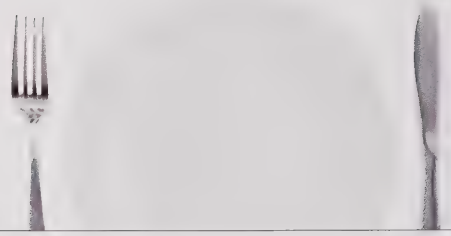
An artist's whimsical rendering of *Scarborough Fair*, the lyrics of which present a textile and costume conundrum.

Illustration: Michael Vandelaan

A Rational Diet

British Army and Navy Fare in the War of 1812

BY JAMES CHATTO



Much of the War of 1812 was fought on the Great Lakes. At the time, British sailors were rationed a pint of rum per diem by their ship's purser (corrupted by the sailors to "pusser"). A couple of "tots" were issued to each sailor before battle (and many thereafter).

I once interviewed a professional psychic in Toronto who told me about my past lives. Among other callings, I had been a member of the council of Atlantis, a medieval student of alchemy, and also a British soldier stationed in Fort York during the War of 1812. "Not an officer," he smirked, "just a private. You were stabbed in the belly while staggering home from a tavern, late at night. It was a fatal wound."

The detail was impressive. And perhaps it explains why I have ended up back in Toronto 200 years later (unfinished business?) and why I have always been particularly fond of the great British dish boiled beef and dumplings. A pound of beef and a pound of flour were the principal daily rations of the redcoat serving in Upper Canada, together with a little butter, rice, peas, and two ounces of rum. Boiling the meat in the mess kettle made it tender enough to chew and yielded a nourishing broth that could be thickened with the rice or peas. The flour could be baked into bread or mixed with water and formed into dumplings called dough boys. Vegetables, fruit, cheese, seasonings, and anything else required to relieve the awful monotony of the diet had to be bought, foraged, or stolen.

No doubt, the quality of the beef varied. At the start of the war, it came from excellent, fresh local cattle, but as garrisons grew and herdsmen were called from their pastures to join the militia, that source was no longer adequate. Lieutenant John Le Couteur of the 104th Foot, who left posterity a most entertaining journal of the war, was a reluctant quartermaster, complaining of "having to ride about the country with an escort, buy oxen, flour & rum where I could get them, then do the distribution myself." Eventually, the British army solved the problem in a way that seems rather surprising, by purchasing livestock from opportunistic American farmers who drove their herds up into Canada from New York and Vermont, leaving their own neighbours hungry.

But supplying a *marching* army was always hit or miss. On the night before the bloody Battle of Lundy's Lane, the British soldiers had nothing but bread and butter to eat; on the morning after, Le Couteur and his fellow subalterns found that "a great Camp Kettle full of thick chocolate revived us surprisingly, though we devoured it among dead bodies in all directions."

How a cauldron of hot chocolate made its way onto the battlefield is anyone's guess (no jokes about Laura Secord, please), but Le Couteur's war is full of bizarre moments. He fishes for bass and pickerel on the Niagara River while being shot at by enemy soldiers, steals peaches from gardens in the ruins of Queenston, and has a "capital" picnic of steak, potatoes, and brandy with a Yankee officer while trying to spy on American positions in Fort George. And when an end is finally announced to this "hot and unnatural war between kindred people," he invites several American officers to dinner and makes the regimental band play "Yankee Doodle." Proof positive that the reality of war is far more surreal than any psychic's babble. o

JAMES CHATTO is a Toronto-based food writer and the editor of *harry* magazine.

ROM MEMBERS ROM Members receive a 10% discount in c5 Restaurant Lounge and Food Studio.

Photo courtesy Pusser's Rum.

Riddles of the Cosmos

Ancient Egyptian Hieroglyphs and More

BY MARK KINGWELL

The Greek compound word *hiero-glyph* can mean any kind of sacred engraving, but the mysterious hieroglyphs that come down to us from Egyptian culture have a special appeal. The uncanny symbols and figures—geese, cats, snakes, human feet—offer more than just a lettering system. They throb with cryptic meanings, beckoning and forbidding at once.

Like so many people, I was fascinated by them as a child, and I filled notebook after notebook with coloured versions copied from library books. This early immersion in sign-systems and puzzle-games led me to ever more elaborate mysteries: Tintin capers, runic Tolkien fantasies, the multi-level world of Dungeons & Dragons, and eventually academic scholarship. The human desire to bind up the sacred in a package that forbids easy access exactly parallels the pleasure we take in solving riddles. Facing the veil of arcane truth, we are all, once more, awed children.

Religious scripture offers the clearest examples of high-stakes hermeneutics—the art of interpretation—which derives its name from Hermes, fickle messenger of the gods. Some texts, such as the Talmud, layer a thick palimpsest of commentary over an original document, such that there is soon no viable distinction between them. Others, such as the Bible, have authority that is everywhere destabilized by disputes, usually hidden or even suppressed, about authenticity and authorship. There are even those, like the Qu'ran, that are believed to be verbatim dictation from a divine source.

In philosophy we are trickier: we like to hide secrets in plain sight, like Poe's purloined letter. The eminent political theorist Leo Strauss, for example, argued that the canon of Western philosophy was shot through with seams of "hidden writing." Politically or religiously unpopular thinkers could code their real ideas behind bland conformity. Contradictions and other flaws in the text work as clues, bread crumbs marking a path to wisdom.

Thus, Maimonides' famous *Guide for the Perplexed* is actually intended to increase perplexity, not cure it; and Plato's beautiful dialogue *Phaedrus*, in which philosophical writing is first celebrated then dismissed, is not a treatise at all but a palinode—that paradoxical poetic form which both affirms and denies its thesis. Writing is forever undermining the very authority its presence apparently asserts. Even simple letters are not, despite the form of legal interpretation known as *black letter*, innocent vehicles of transparent meaning.

Texts of genius are like elaborate rebuses, those little puzzles that employ pictures and allusions to entangle meaning. A romantic classic: an eyeball + a heart + a female sheep equals *I love you*. My favourite short rebus is attributed to Voltaire, who answered a dinner invitation from Frederick the Great (itself written in rebus form) by writing *Ga!* This is no inarticulate cry of hunger but a coded message that must be sounded out to be revealed: *Gé grand, A petit* (big G, little A) equals *J'ai grand appetit!* Inform the cook.

The detective in a popular mystery-novel series by Ian Rankin is named John Rebus, which seems appropriate; and I'm told that several beer companies include playful rebuses under their bottle caps, presumably to test whether those drinking can still think. Rebuses must be solved through a mixture of sight and sound. Their manifest content, to use a Freudian term, actively hides their latent content.

Indeed, Freud postulated in *The Interpretation of Dreams* that our subconscious selves were infinitely creative about hiding meaning. Even if most of our dreams are banal, this meaning is never inconsiderable. It is said that Alexander the Great dreamed of confronting a mocking satyr during the siege of Tyre, and resorted to his own version of a Freudian analyst, the seer Aristander—who told him that the satyr meant *sa Tyros* ("Tyros is yours"). And so it was.

But, as Freud reminds us in his essay "The Uncanny," secrets are unsettling precisely because they mix the familiar and the alien. We think we know what we are hiding, and indeed who is doing the hiding. Yet the biggest puzzle of all is the mind itself, the hieroglyph we call consciousness. Secrets sometimes come out, and codes are broken, but we remain, through it all, mysteries to ourselves. o

MARK KINGWELL is a Professor of Philosophy at the University of Toronto. His new collection of essays, *Unruly Voices*, appears this fall.

Illustration by Claire Louise Milne.

Augment This

Transforming the Museum Experience with Augmented Reality

BY TRACY RUDDELL

Augmented Reality stations allow visitors to flesh out dinosaur skeletons.

Photo A. J. Messier Photography

Bringing prehistoric beasts back to life seems impossible, but technologies such as augmented reality (AR) can breathe new life into old bones. AR is changing the ways in which visitors engage with objects and challenging museums to think differently about how to display collections.

The ROM's current exhibition, *Ultimate Dinosaurs: Giants from Gondwana*, uses AR to bring dinosaurs to life. Through an AR app, virtual experiences are layered over real environments to produce three-dimensional, life-like visuals that enhance the user experience, in this case of great southern hemisphere dinosaurs. The ROM is the first museum in Canada to offer AR on this scale.

Museums have been using video for decades to enhance the interpretation of objects beyond what text labels alone can deliver. And now gamification—applying the principles of game design to other activities to make them more fun and engaging—is the buzz. But AR is something different. It combines two worlds—the real and the computer-generated. It's not virtual reality, which is about creating a completely simulated world. AR merges virtual with real world, and that's what's so exciting for museums.

AR is a powerful tool for museums because it can free objects from the confines of their displays. For the ROM's exhibition, that means fleshing out and animating skeletal casts to show what these dinosaurs may have looked like with skin and how they would have moved and behaved.

The addition of technology to what, in many ways, is a classic dinosaur exhibition, makes *Ultimate Dinosaurs* feel contemporary and relevant. Visitors have the choice of experiencing the exhibition in a more traditional fashion or using the extra tools provided to interact with objects in new ways. Being able to control the type and amount of information you choose to consume—to curate your own experience of the real thing—is a more compelling learning experience than any textbook can deliver.

Like many museums, the ROM is cognizant of the importance of creating exhibition experiences that are immersive and innovative. Staying ahead of the trends is difficult on tight resources coupled with greater public expectation of interaction with objects on a deeper, more personal level. Some new technologies will be fads; museums need to avoid gimmicks if they want to deliver experiences of substance. But some technologies promise genuine engagement, striking a balance between education and entertainment.

AR brings history to life and to be able to put that kind of power in the palm of someone's hand means museums can help people see the world differently. That's something the ROM hopes to do a whole lot more of. ○

TRACY RUDDELL is assistant vice-president of Marketing at the ROM.

1 HOW TO DOWNLOAD THE APP

The ROM Ultimate Dinosaurs app is available for free from the App Store by visiting **www.itunes.ca/appstore.**

2 WHERE TO USE IT

- At three AR stations in the *Ultimate Dinosaurs* exhibition, either on your personal iOS device (look for the graphic markers) or by using the iPads provided.
- Select ROM advertising.

3 TRY IT NOW

- Download the app and point your iOS device at the marker below.

For more information, visit **rom.on.ca/dinos**. The ROM Ultimate Dinosaurs app was developed with Meld Media of Toronto, Canada.

Available on the App Store

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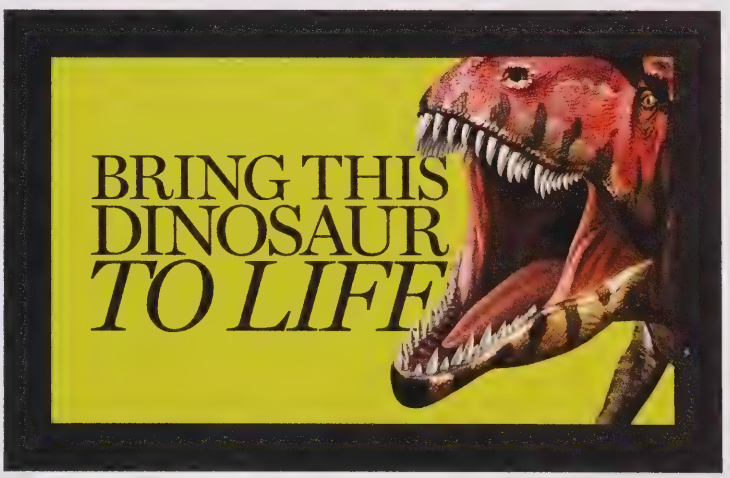

Ephemeral Life

How amphibian life cycle is tied to this roadside mummy

BY DAVE RUDKIN AND ROSS MACCULLOCH

Q **While parked on the shoulder of Highway 11 near Powassan, Ontario (a couple of hundred metres past a huge rock cut blasted in recent years to make way for two-laning), we came across a curious find and thought you might be able to help us identify it (that is, determine whether it's a fairly recent "thing" or a not-so-recent "thing"). It measures about 30 mm long and 8 mm wide; the attached pictures show a long ridged tail, what appears to be a front foot with three long claws, and a cavity on one side of the "head." Can you assist?**
— Karen M. and Matthew H., North Bay, Ontario

A After examining your original images of this strange little object we were reasonably certain we had a solution to the mystery, and confirmation came after you kindly mailed us the specimen itself for closer examination. As it turns out, what you discovered on your roadside foray is the thoroughly desiccated and mummified corpse of a larval salamander. That would make it a not-very-recent "thing" indeed.

Although many key identification features are no longer visible, there are enough clues remaining to suggest that this was a larval salamander belonging to the genus *Ambystoma*, also called mole salamanders (Powassan is well within the Ontario range of this genetically complex group of amphibians). How the wee beast came to be preserved in such a state is intimately tied to the fascinating life cycle of these generally cryptic salamanders.

After emerging in very early spring from winter burrows beneath the forest floor, adults mate in ephemeral woodland ponds. Females attach their fertilized eggs to underwater plant growth, and the tiny aquatic larval salamanders, bearing frilly external gills on either side of the head, emerge after a few weeks.

Metamorphosis to the adult form, in which the gills are lost and the hind limbs fully developed, typically takes place by midsummer. It is likely that the pool inhabited by this little larva, however, drained or evaporated far too quickly for the full transformation to an air-breathing adult that could survive out of water.

Rather than being consumed by scavengers or succumbing to total decay, the fleshy body dried to a rigid, distorted, and barely recognizable husk, preserved until your chance roadside encounter some months later. In its present form, we must admit, this once lithe little pond-dweller does have a distinctly prehistoric look about it. o

Mummified larval mole salamander. The circular cavity is probably the eye socket, and the series of low bumps along the tail indicate the position of underlying vertebrae.
10 mm

A larva of the mole salamander *Ambystoma maculatum*, one of several species found in Ontario. This individual, with its well-formed hind limbs, is at a more advanced stage of development than the desiccated example found by Karen and Matthew, but it still retains the three-branched filamentous external gills.

Photos: Mummified salamander by D. Rudkin. Mole salamander larva by R. Altig.

DAVID RUDKIN is assistant curator of Invertebrate Palaeontology and **ROSS MACCULLOCH** is assistant curator of Herpetology, both in the ROM's Department of Natural History.

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Pursuing Prehistory

The Global Search of David Evans

BY SHEEZA SARFRAZ

David C. Evans
CURATOR
[illegible]

Academic Positions

2012–Present
Curator of Vertebrate Palaeontology
Department of Natural History, ROM

2007–2012
Associate Curator of Vertebrate Palaeontology
Department of Natural History, ROM

2007–Present
Assistant Professor
Deptartment of Ecology and Evolutionary Biology, University of Toronto

Education

2007
Doctor of Philosophy, Ecology and Evolutionary Biology, University of Toronto

2003
Bachelor of Science, Integrated Sciences Program, University of British Columbia

[illegible] scenes during the [illegible] *Ultimate Dinosaurs* at **blog.rom.on.ca** [illegible] the **#ultimatedinos** adventure on [illegible] tter **@ROMPalaeo**

Within the pale yellow walls of the ROM's vertebrate palaeontology lab, David Evans and his ROM colleagues work on fossils that have been collected from all over the world. Giant dinosaur bones encased in plaster-of-Paris and burlap field jackets occupy shelves, desks, and drawers, and the colossal ones cover even the floor. These specimens suggest adventure, palaeontological expeditions to distant locales. This is reflected in Evans's enthusiasm as he explains that "there are five brand new dinosaur species in the lab right now. And we just found another one in the field last month."

Curator of the Museum's current exhibition *Ultimate Dinosaurs: Giants from Gondwana*, Evans also oversees a very active dinosaur research program at the ROM that includes international fieldwork. In the past few years, he has travelled to Mongolia, South America, the Arctic, and Africa. "I like to work in places that have not been explored," he says. "These areas can fill in big gaps in our knowledge of past diversity."

Evans's research focuses on reconstructing patterns of evolution and on the diversity of dinosaurs during the Late Cretaceous period, the last in the great Age of Dinosaurs. It is, as he says, "an attempt to understand the evolutionary and ecological dynamics of dinosaurs as they relate to climate change leading up to the end-Cretaceous extinction event." He hopes that this will shed new light on the causes and consequences of mass extinctions in general—something pertinent to the biodiversity crisis we are facing today.

Despite the allure of exotic adventures, Evans prefers to work close to home. "Alberta, because it's so fossil-rich, is probably my favourite place to do fieldwork," he admits. He is a leader of the Southern Alberta Dinosaur Project, a ROM collaboration with Cleveland Museum of Natural History and the Royal Tyrrell Museum. The project is uncovering new species of ancient animals at a surprising rate, and Evans divulges that three new species will be announced within the year.

Shortly after joining the ROM in 2007, Evans made a name for himself by discovering in the ROM's palaeontology storage an almost complete skeleton of the gigantic sauropod *Barosaurus*. The long-forgotten dinosaur's bones had sat in separate cabinets until, like pieces of a jigsaw puzzle, they were assembled by the newly minted palaeontologist and displayed as the centre-piece of the James and Louise Temerty Galleries of the Age of Dinosaurs.

But he feels that his most significant achievement to date is his role in the discovery of the world's oldest dinosaur nesting site. Through a series of four excursions since 2005, he uncovered a large number of fossilized nests in South Africa, which are approximately 200 million years old. The fossilized nesting site significantly alters the general perception of dinosaurs as "monsters," offering insights into the child-rearing habits of the earliest dinosaurs.

Before we leave the lab, Evans gives a sneak preview of another soon-to-be-unveiled treasure. Only parts of it are visible, but its scaly skin is striking and rough to the touch. He reveals that it is a complete skull of *Gryposaurus* from Utah. "What's special about this specimen is its preserved skin. Note that the scales don't overlap. In this way it is similar to a Gila monster or a Komodo dragon. This is the most skin ever found on the face of a dinosaur."

Ever the adventurer, he is looking forward to his next expedition, when he resumes his hunt for dinosaur remains deep in the heart of the Sahara Desert. ○

David Evans excavating a 95-million-year-old crocodilian skull in northern Sudan, 2012.

Photo: David Evans in Sudan by J. Muller.

SHEEZA SARFRAZ is a researcher/writer at the Royal Ontario Museum Press.

WYOMING

Kevin Seymour
ASSISTANT CURATOR
Vertebrate Palaeontology

The Early Eocene Green River Formation in Wyoming has produced thousands of complete fossils, primarily fishes. Recently, Kevin Seymour was part of a team that described the world's most primitive known bat, based on a complete skeleton from the Green River Formation (see *ROM*, Winter 2008). This study demonstrated that the earliest bats flew but had not yet evolved the ability to echolocate—the sonar method by which bats navigate and forage. Currently, Seymour is in the process of describing a new fossil bird, distantly related to the living parrots, from this same area, also based on a complete ROM specimen.

ONTARIO

Mark Peck
TECHNICIAN
Ornithology

Mark Peck continues his shorebird research in James and Hudson bays of northern Ontario, working with teams of students, volunteers, and biologists from the Ontario Ministry of Natural Resources and the Canadian Wildlife Service. The teams monitor shorebird breeding and stopover sites and provide important information on shorebird numbers, length of stay, annual productivity, and species diversity. Banding programs and recently developed websites allow researchers to track and share information from the Arctic to the wintering grounds in South America. Southwest James Bay is a critically important fall stopover site for waterfowl and shorebirds and it is hoped that the information learned on these expeditions will lead to better protection of the birds and of this unique part of Ontario.

NUNAVUT

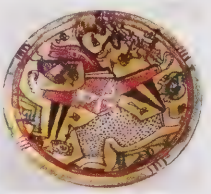
Kenneth R. Lister
ASSISTANT CURATOR
Anthropology

A November 1935 eye-witness report from Pangnirtung, Baffin Island, describing a picturesque scene of Inuit families sailing away in whaleboats for their winter trapping areas is a critical image in Kenneth Lister's research. The use of wood whaleboats manufactured in foreign boat-building shops represents a significant change from the traditional Inuit skin-on-frame umiaks and kayaks. It is not only a change of boat type, but a change that influenced the financial, subsistence, social, and spiritual realms of the Inuit world. Centred in Pangnirtung, Lister's research investigates the complexities of culture change as the Inuit altered their reliance on traditional kayak technology to that of a boat type acquired through commercial relations.

MASSACHUSETTS

Robert Mason
TECHNICIAN
West Asian Civilizations

Because of the political situation in Syria, Robert Mason's fieldwork in that country is on indefinite hiatus, and he is focusing on other areas of research. Recently, Harvard's Art Museum and Semitic Museum asked Mason to visit and share his expertise on their collections of pottery made in the Middle East between 700 and 1700. Mason was able to identify and authenticate a number of treasures in the Harvard collections that were previously unidentified. A particularly interesting piece is this bowl from 10th-century northeast Iran with what seems to be a central Asian shaman depicted on it.



CHINA

Ka Bo Tsang
ASSISTANT CURATOR
Chinese Paintings

To gain a better understanding of historic trade relations between China and the rest of the world, Ka Bo Tsang undertook a study tour of various sites in south China in October 2011. She was especially captivated by the techniques and ingredients used to make porcelain at Jingdezhen, for centuries one of the world's most famous ceramic centres. She also visited the impressive Guangdong Maritime Silk Road Museum to see both "Nanhai No. 1," a cargo vessel shipwrecked between 1127 and 1279 just after it departed on a trade voyage, and the pottery from Jingdezhen that was found in its hold. The ship was carrying an estimated load of 50,000 to 70,000 items, primarily ceramics.

Where in the world are they?

The who, what, and where from our international curatorial team

Photos: Shorebird courtesy Mark Peck. Mark Peck by Jean Iron. Inuit whaleboat by Leslie D. Livingstone, ROM 997.84.134.111. Ken Lister by Annie Veilleux. Iranian bowl by Robert Mason. Robert Mason by Peter Bagnall. Jingdezhen pottery by Ka Bo Tsang.

The COLOURS of WAR

*Honouring the **First Nations**/ **British Alliance** in the War of 1812*

BY TRUDY NICKS

Left to right, Jacob Warner, John Tutlee, and John Smoke Johnson, Six Nations veterans of the War of 1812. They are photographed here in their 90s before a Red Ensign flag, a symbol of their sovereign relationship with the British Crown.

Photo courtesy Woodland Cultural Centre.

The First Nations warriors who fought alongside the British in the War of 1812 were proud of their association with the British crown. That pride persisted through their lives.

A British Red Ensign flag and a portrait of John Brant, a Mohawk warrior and hereditary chief, are among the earliest collections of the ROM. The flag arrived in 1911 when the Independent Order of Foresters donated objects and natural history specimens from a museum established by their late leader, Dr. Oronhyatekha.

Ten years later, the ROM purchased an oil painting of John Brant from one of his descendants. Both the flag and the painting are now on display in the War of 1812 section of the exhibit *Sovereign Allies/Living Cultures: First Nations of the Great Lakes* in the Daphne Cockwell Gallery of Canada: First Peoples. Before they could be displayed, the pieces were cleaned and repaired by ROM conservators Shirley Ellis and Heidi Sobol.

British Red Ensign Flag

This flag design was used by British navy and merchant ships after 1801. The example in the ROM's collection is just over four by eight feet (approximately 1.2 × 2.4 metres) in size. It is the type of flag that the British gave as diplomatic gifts to important First Nations leaders in the War of 1812 period. Our Ensign is associated with Chief Oshawana (John Naudee), an Anishinaabe war leader from the Walpole area of southern Ontario, who saw action during the 1812–1814 conflict. It was kept by his descendants until it became part of the Oronhyatekha Museum about 1900.

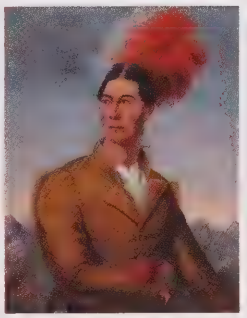
Flags, or "colours," and medals had long been used by European powers as diplomatic gifts in the Great Lakes region. Such important marks of alliance were awarded to significant leaders outside the large events in which cloth goods, arms, ammunition, and other presents were distributed to assembled nations.

The journals kept by Sir William Johnson, British superintendent of northern Indians in the Great Lakes region in the 18th century, reveal how the recipients of the flags and medals used them as visual expressions of the state of diplomatic relations. They could be displayed in affirmation of alliance, as with a Delaware chief who declared that the medal and colours given to him at Niagara in 1764 "binds me so to you [that] nothing can alter my resolution."

They also figured in strategic re-alliances required when power passed from one European nation to another. Johnson recorded the arrival of a chief of the Sauk Nation on August 18, 1762: "He brought with him a pair of French Colours Flying on Board his Canoe [and he] hoped I wou'd Excuse him & give him a Stand of English Colours & he would Burn the French Ones." On occasion, diplomatic gifts could also be useful in expressing displeasure, as in 1768 when three "seemingly much discontented" Chippewa chiefs at Fort Michilimackinac "[threw] their English Colours into the Lake."

In 1912, Mississauga Chief Paudash displayed his family's Red Ensign flag, a "sacred relic," at the War of 1812 commemoration held at the Brock Monument at Queenston Heights. For First Nations, these flags and other marks of allegiance still remain important symbols of the sovereign relationship that they had enjoyed with the British Crown during the period of warfare in the Great Lakes region.

Portrait of John Brant



Many 19th-century artists painted images of Native peoples. Typically, these works were destined for institutions and collections far removed from the communities of the Native subjects portrayed. Our oil portrait of John Brant (1794–1832) has an unusual history in that it was painted for, and remained with, the Brant family until it was acquired by the ROM. It is one of three oil paintings purchased in 1921 from Jane Kerby (Mrs. Donald Kerby) of Morden, Manitoba, by Sir Byron Edmund Walker, a founder of the ROM, and thirteen other "friends of the museum." The other two portraits are of Joseph Brant (c. 1743–1807) and Sir William Johnson (c. 1715–1774). All three are copies of paintings by famous artists, but Mrs. Kerby only knew that a "country artist" had painted the John Brant portrait. The paintings originally hung in the Brant family home in Burlington, Ontario, which was built about 1800.

While it may not be possible to pin down the date or name of the artist(s) who copied the three portraits for the Brant family, we can speculate on why they were produced. The three men portrayed were kinsmen. Joseph and John were father and son, and Joseph's sister Mary (Molly) Brant was consort to Sir William Johnson. The Brants were prominent members of the Mohawk Nation, but they were also well acquainted with lifestyles introduced by the British.

Their home was said to be the equivalent of the finest homes occupied by their Euro-Canadian neighbours. It would have been well within the keeping of that lifestyle for the Brants and their descendants to display family portraits in their home. The Brant house passed from Joseph Brant to his son John, then to John's brother-in-law William Johnson Kerr, and eventually to his son Simcoe Kerr.

The Kerrs were descendants of Sir William Johnson and Molly Brant. Author William L. Stone (1792–1844) reported seeing the John Brant portrait when he visited the Brant home in 1836. Stone borrowed the portrait to be copied for an engraved image used in his book *Life of Joseph Brant—Thayendanegea.*

In deference to John Brant's involvement in the Niagara campaigns in the War of 1812, Niagara Falls was added as a background in the published image. In about 1859, the three paintings passed into the care of Simcoe's sister, Catherine Elizabeth Kerr Osborne, Jane's mother. Jane Kerby, the last family member to own the paintings, was the great-granddaughter of Joseph Brant and a great-great-granddaughter of Sir William Johnson. In her letters to the ROM, she expressed her wish to have the paintings returned to Ontario, and to an organization that would value them for their historical significance.

RESTORING the RED ENSIGN

BY SHIRLEY ELLIS

When this wool ensign arrived at the ROM's Textile Conservation Lab it was in poor condition with major structural damage. It had holes and losses, but the most significant damage was a tear extending across the lower third of the body, still partially held together by a crude old repair that was causing some distortion. Thinning fabric, especially toward the lower right corner, further weakened its structure, as did the soiling and stains. In this condition, the ensign would have been vulnerable to further damage if exhibited, not to mention that the damage would prove distracting to anyone viewing it. What it needed was to be cleaned and stabilized.

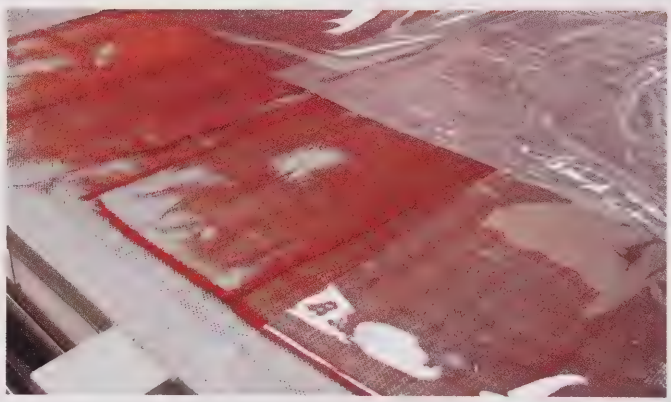
Cleaning always begins by determining the best way to remove the soil safely. If wet-cleaning proves to be the method of choice, then the dyes need to be tested for colourfastness. In this case, testing produced dubious results, so it wasn't certain that full immersion wet-cleaning would be safe. To reduce that risk, I used low-suction vacuum cleaning to remove particulate soil, followed by suction wet-cleaning. Suction pulls the water down, restricting its movement and hastening drying time.

First, with the suction on, I sprayed a small section of the ensign with distilled water, gently opening the fibres to improve wetting.

Next, after masking off the remainder of the flag to improve suction, I flushed distilled water through the masked area (see right). Suds from an *Orvus*® detergent solution were then worked into the area before being thoroughly removed by repeated rinsing with distilled water.

While the cleaning process didn't make a dramatic difference in the look of the fabric, the dirty water in the tank proved that suction wet-cleaning succeeded in greatly reducing the soiling.

Once clean, the ensign needed to be stabilized. Because a flag is a double-sided textile, consideration was given not to cover up the "back." Nylon tulle proved a good choice for a support fabric. Available in a variety of colours (eliminating the need to dye the fabric), it's also relatively transparent. Securing the tulle by stitching alone would not provide enough stability because of the tulle's very open net structure, so a tacky, safe adhesive was necessary. Lascaux acrylic adhesives 360HV and 498HV fit the bill. Using only finger pressure, I successfully positioned the fragmented sections and loose yarns before applying heat to activate the adhesive.



But because this adhesive forms a light bond, the ensign required additional stitching. Using the ultrafine *Gütermann Skala* polyester threads, the damaged areas (tears, holes, and losses) were secured by couching. Additional running stitches were added to secure the seams to the tulle. Finally, where the tulle was exposed through holes or losses, the adhesive was removed by swabbing it with acetone, because otherwise these areas would attract dust, and when later rolled for storage, the ensign could adhere to itself.

The ensign, now clean and stabilized, is on display in the *Sovereign Allies/Living Cultures* exhibition in the Daphne Cockwell Gallery of Canada: First Peoples, without additional stitching to the rigid padded support. The fabric covering the support was selected specifically for its similar colour, weight, and weave—and so that viewers can now fully enjoy the ensign without being distracted by any deterioration.

Red ensign, ROM 911.3.115.

A LITTLE-KNOWN PAINTING of a WELL-KNOWN CHIEF

BY HEIDI SOBOL

When the painting of John Brant (1794–1832) arrived in the lab for conservation assessment, I hinted to curator Trudy Nicks that we were in for a surprise. It was coated with a disfiguring veil of sooty dirt, which itself obscured a thick and yellowed layer of varnish. Once the layers were removed through a combination of aqueous and solvent-based cleaning solutions, the cool blues and vibrant reds in the palette would pop. Yet the biggest surprise would not come from the easel in the lab, as I had expected, but from the ROM's main library.

In preparation for a conservation treatment, conservators research as much as they can about the artist, provenance, and genre. This research is in addition to our analytical investigation of materials and condition of the painting. For most cases where we don't know the name of the artist or the date of the painting (enter our John Brant) we work with curators to explore theories and gain a better understanding of the piece.

The ROM Library has a pristine set of *The History of the Indian Tribes of North America.* Originally published in three volumes, from 1837 to 1844, by McKenney and Hall, the work includes a compilation of lithographs after paintings by Charles Bird King (1785–1862).

Thomas McKenney (1785–1859), of the US War Department, had the idea to commission King to paint the portraits of prominent Indians who visited Washington. He and James Hall (1793–1868), a lawyer and author, created the aforementioned book using the paintings as "models" for the lithographs.

About halfway through the second volume, we came across a fine lithographic rendering of John Brant—our John Brant. This could mean one of two things: our painting was the model for the lithograph (the long-shot theory) or, more likely, a painting by one of King's contemporaries.

But what about the long-shot theory? This would mean that our painting *could* be by Charles Bird King. With the assistance of the ROM Library, we began to reconstruct the history of the McKenney publication and works by King.

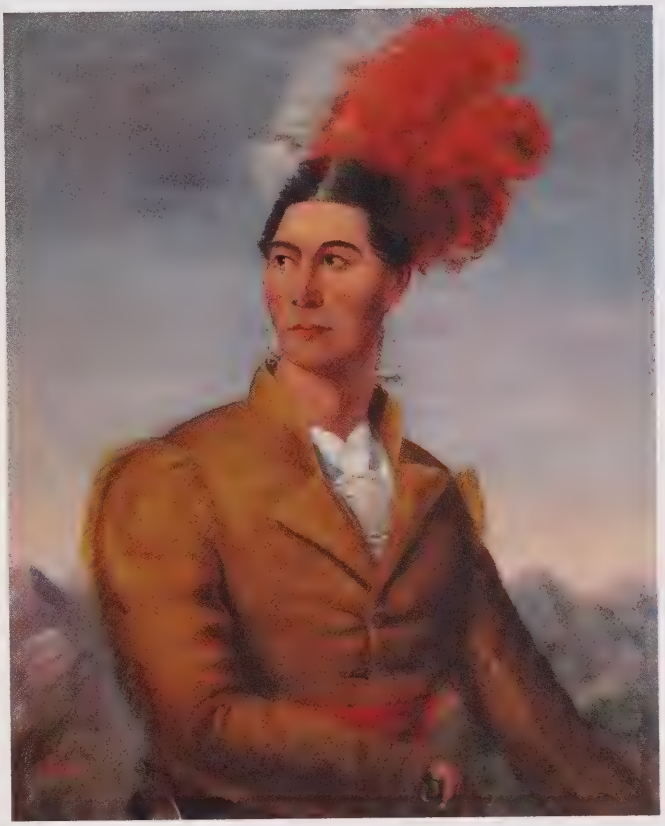
What we discovered was that the original King painting of Brant was moved to the Smithsonian Institute in Washington in 1858 after the collection of the National Institute (one of Washington's earliest public collections) was disbanded just prior to the National Institute's charter expiring in 1862. Tragically, on the afternoon of January 24, 1865, a fire engulfed the second-floor art gallery where the painting was on display. Of the 139 paintings by King in this gallery, only five survived—salvaged in the first few minutes of the blaze. The painting of John Brant was not one of the five.

Left with our likely probability that this painting was possibly produced by one of King's contemporaries, research will continue on the origin of our portrait of John Brant.

In the lab, our intern, Sayeh Khajeian, systematically identified and treated discrete areas of damage obscured by copious amounts of overpaint and the soot that had likely come from a domestic furnace or fireplace and had accumulated over many years.

Trudy and I did indeed revel in the colours uncovered by the comprehensive cleaning. Housed in a new, custom-made frame, the painting is now on display in the Daphne Cockwell Gallery of Canada: First Peoples.

TRUDY NICKS is senior curator in the Anthropology section of the ROM's Department of World Cultures. **SHIRLEY ELLIS** (Textiles) and **HEIDI SOBOL** (Paintings) are senior conservators in the ROM's Department of Conservation.



Top: John Brant, oil portrait by an unknown artist Photographed after conservation treatment.

Left: Ahyonwaeghs Chief of the Six Nations (John Brant) Lithographic image from *The History of the Indian Tribes of North America* by McKenney and Hall, 1837–1844

John Brant, ROM 921.72.2.

EGYPTIAN HIEROGLYPHS

The Words of the Gods

BY GAYLE GIBSON
WITH ILLUSTRATIONS BY DOUGLAS CHAMPION

The Egyptian section within ROM World Cultures holds hieroglyphic art commissioned by renowned ROM Egyptologist Dr. Nicholas Millet. The art is used here to illustrate Gayle Gibson's discussion of this once-cryptic language.

The ancient Egyptians began using symbols to represent sounds, objects, and ideas in a system of writing about 5,000 years ago. Some of the earliest known glyphs are engraved on inventory tags attached to articles in royal tombs. Others, carved into cliffs, record historical events. The Egyptians' own name for their writing system, *medew netjer*, "divine words," is shown below. This phrase suggests that the earliest use for Egyptian hieroglyphs may have been to record hymns and prayers, or perhaps the name simply announces that writing is a gift from the gods.

The hieroglyphic writing system was not the only writing system used in ancient Egypt, but it was the preferred script for recording, in stone, royal decrees and other texts meant to last forever.

Despite their use in funerary contexts, Egyptian hieroglyphic texts are alive with birds and cattle, men and women, houses and boats, gods, and the forces of nature. Beautiful glyphs emphasize the strength of life and the power of nature.

If, as a child, you learned to write out your name in hieroglyphs, you learned only a few of the hundreds of hieroglyphs available to the ancient Egyptians.

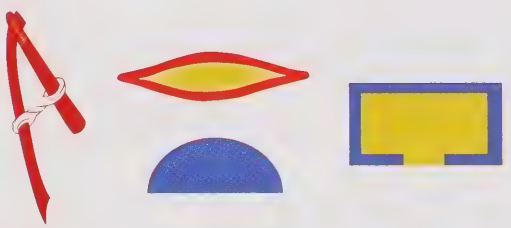
Some hieroglyphs represent consonant sounds. (Vowels in ancient Egyptian were not written out.) A hieroglyph can represent one consonant, or a combination of two, three, or even four consonants. The ancient Egyptians would have used single-consonant glyphs for sounding and spelling out the names of foreigners.

Other hieroglyphs represent what they picture—a man, a woman, a lion, a boat. Some hieroglyphs, called determinatives, are not pronounced, but help to define the word they are attached to. Finally, some hieroglyphs have different meanings in different contexts; they can represent sounds, objects, ideas, or act as determinatives.

▶ The two hieroglyphic words shown at right would have sounded very much alike. We are not sure of the vowels, but they each include the consonants *m*, *r*, and *t*, and Egyptologists conventionally pronounce both "meret." Though they may have sounded similar, the words have different meanings and include different glyphs. Notice how some glyphs represent sounds and others represent ideas.

Hieroglyphs could be written left to right, right to left, or top to bottom. The orientation of people and animals tells where the text begins. If the people and animals are facing right, read from right to left; if they are facing left, read from left to right.

The glyph of a hand-held hoe represents the consonants *mr* (pronounced "mer")



mr + *r* + *t* + house floor plan = street

mr + *r* + *t* + man with hand to mouth, to show he is speaking or expressing emotion = love

Man and Woman: Different but Equal

Compare these glyphs of a man and a woman. Both people sit comfortably on the ground and both look relaxed. The man gestures as he talks—he is active, but not working or fighting—while the woman listens. The man's red skin associates him with the energy of the sun and shows that his place is outdoors. The woman's pale skin suggests that she spends more of her time in the shade. Egyptian women may well have had lighter skins than their brothers and husbands because of the nature of their work, but the difference was probably not quite as marked in life as it was in glyphs.

There are three ways to read these glyphs: as the word man (*za*) and woman (*zat*); as first-person pronouns (both pronounced "ee"); or as determinatives of gender.

▼ The word *remetj*, "people," is spelled with a picture of a mouth for the sound *r* and a tethering rope for *tj*. The sound *m* was not written. At the end we see the glyphs for both man and woman. The three lines behind them make the word plural. The man and woman are shown equal in size, indicating equal respect for the two sexes even though human males are generally larger than human females and ancient Egyptian men had a more prominent role in public life.

▼ This is the word *shemaew*, "musician." The determinative at the end indicates that the musician is male.

▼ Egyptian women loosened their hair and threw dirt onto it as a sign of mourning. The two glyphs at the end of the word *lakbyt*, "mourning woman," are determinatives that illustrate its meaning. The other glyphs represent the sounds in the word.

Layers of Meaning

The ancient Egyptians loved puns and often found them meaningful. The word below is *remeet*, "tears." A play on the sound of *remeet* and *remetj*, "people," became associated with a myth that humans were created from the tears of a god.

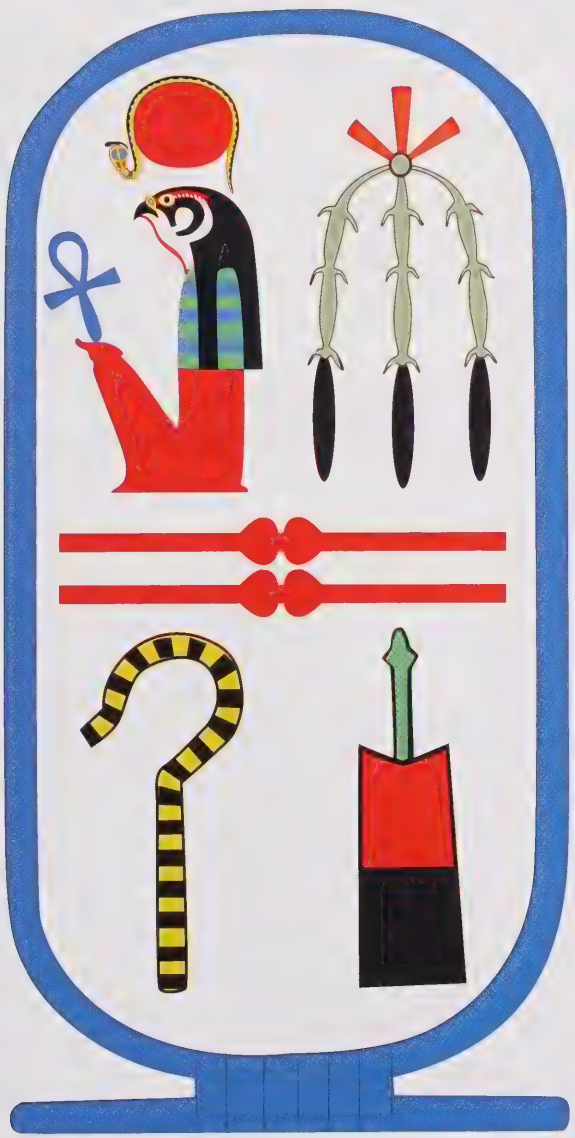
▼ We find deep meaning in the glyph of the scarab beetle. This glyph represents three consonants, hard *h*, *p*, and *r*, which together are pronounced "kheper" or "khepri," while the verb *kheper* means "to develop, to transform, to come into being." Scarabs are dung beetles—they feed on animal waste, and lay their eggs in balls of dead matter. They are an apt symbol of new life from old. Scarabs left with the dead were a prayer that what seemed to be merely a hollow corpse would transform again into a radiant being.

Scarabs are also a symbol of the most powerful and important Egyptian god—Re, the god of the sun. The way they roll their balls of dung into underground tunnels mirrors the action of the sun as it sinks below the horizon every night. The morning sun was called *Khepri*, and sometimes *Khepri-Re-Atum*, "the god of creation who came into being by himself."

The Many Names of the King

A king's personal name and throne name were always written in ovals we call cartouches. Ramesses III's name is shown below. The first image is the sun god, Re. He is shown as a seated hawk-headed man crowned with a sun disk. The Uraeus, a divine serpent, protectively encircles the disk. Re holds an ankh, the symbol of life. The second sign shows three fox skins tied together at the noses. They represent the sound *mes*, which conveys the idea of birth. The two horizontal signs are the letter *s*. In ancient Egyptian, the name was pronounced something like "Ra-mes-su," which means "it is Re who caused his birth."

The shepherd's crook stands for the word for ruler, *heka*. The column with a tenon on top, which was pronounced something like *u-wen*, stands for the holy city of Iunu, or, as the Greeks called it, Heliopolis. These two signs at the end of the king's name allow the reader to distinguish Ramesses III (*Ramessu-heka-Iunu*, "Ramesses, ruler of Heliopolis") from the more famous Ramesses II (*Ramessu-mery-Amun*, "Ramesses, beloved of the god Amun").



▼ This handsome pintail duck represents the sound *sa* (I always think of an angry duck guarding its nest). Used on its own, it means "son." The duck, followed by a sun disk reads *sa Re*, "son of the sun god." This title usually precedes the Egyptian king's personal name.

▼ The Egyptian name for the bee was onomatopoeic—*bit*. One of the Egyptian king's more important titles was *n-sw-bity*, "he-of-the-sedge and he-of-the-bee." The bee represents the delta of Egypt, called Lower Egypt, and the title proclaims that the king rules over the whole nation, north and south, delta and Nile valley. This title always precedes the King's throne name.

▲ There is no word in Egyptian for a ruling queen. A woman's title would be King's Mother, King's Wife, King's Sister, King's Daughter, or two or three of these at once, but not "queen." In order to rule Egypt, the female pharaoh Hatshepsut had to use the masculine title "king" and show herself as wearing male clothing. But she was not trying to deceive her people. Her cartouche, shown above, contains her unmistakably feminine personal name.

In Hatshepsut's cartouche, the first signs are a lion and a little loaf of bread. Lions symbolize power and majesty. The lion's head and forelimbs, pronounced "hat," mean "in front of" or "foremost." The central sign in the cartouche is a seated noblewoman who carries a flail as a sign of power. This is pronounced "shepes." The three lines at the end make a plural (pronounced "oo") and when combined with the loaf of bread (*t*, the feminine ending), they make a feminine plural noun, shepsut, "noble women." Together, they spell the name Hatshepsut, foremost of noblewomen.

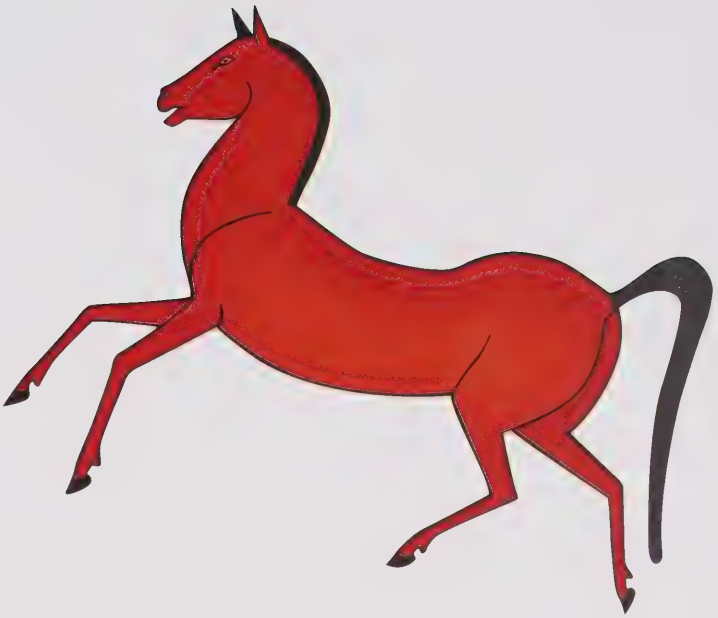
▲ An Egyptian king's throne name set forth a program for his reign. In the case of Hatshepsut, whose assumption of power was irregular and probably seen by some as blasphemous, it was important to announce that the gods accepted her and approved. The name she chose, *Ma'at-ka-re*, is rich in meaning.

The disk represents the sun god, Re; most Egyptian rulers incorporated his name into their throne name. The seated goddess is Ma'at, daughter of the creator god, Atum, and a representative of cosmic truth and justice, which underlie all kingship, all authority. Her ostrich feather represents breath, as well as the sometimes delicate balance between truth and falsehood, justice and injustice. The pair of arms extended outward—to embrace, to accept, and perhaps even to beg—represents the *ka*, an aspect of the human person. It is something we inherit from our parents and pass on to our children. It is born when we are born and leaves this life at the same time we do. Hatshepsut's throne name can be read as "truth is the *ka* of Re," or, more freely, "truth and justice are the soul of god."

Representations of Reality

Most of the Egyptian population lived along the banks of the Nile River. Trade moved upstream with the prevailing wind and downstream with the current. People travelled across the river and along its banks to visit friends, markets, and temples. Even the gods travelled by boat. The hieroglyphs for many different kinds of boats, from simple skiffs to barques, reflect the prominence of boats in daily life. The economy may have depended on trade and transport, but this was also a place where the idea of sailing down to Memphis for a holiday could make a man break out into song.

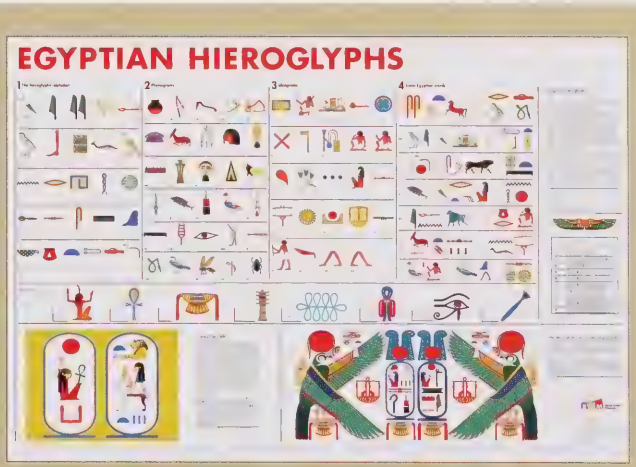
▼ The glyph below shows one of the eight Heh gods who hold up the sky. It can mean "millions." Could the Egyptians count to a million? Did they ever try? Perhaps the glyph's meaning is less a specific number than the sense of a huge number, as many as the stars in the sky—so many that even a god would throw up his hands at the attempt to count them.



▲ In the age of the pyramids, there were no horses in Egypt, not even for the kings. Horses and chariot warfare came to Egypt from the Levant. During the joint reign of Hatshepsut and Thutmosis III, they were still such rare and exotic creatures that Senenmut, Hatshepsut's friend and minister, had his pet horse buried, near his own tomb, a curiosity to accompany him in the afterlife.

With the decoding of the Rosetta Stone, the meaning of ancient Egyptian hieroglyphs was revealed to the world. In the words of Egyptologist James P. Allen, "The decipherment of ancient Egyptian hieroglyphic writing is one of the great success stories of modern archaeology. Before 1822, the civilization of ancient Egypt was mute and mysterious, its images bizarre and incomprehensible to a world convinced that all thought of any worth began with the ancient Greeks."

The exquisite beauty of the glyphs may obscure the very practical role they played in the development of Egyptian civilization. Ultimately, the hieroglyphic system became inextricably identified with the entire culture, although literacy was available only to the governing elite. There are more people alive today who can read ancient Egyptian hieroglyphs than were literate in the age of Tutankhamun. ○



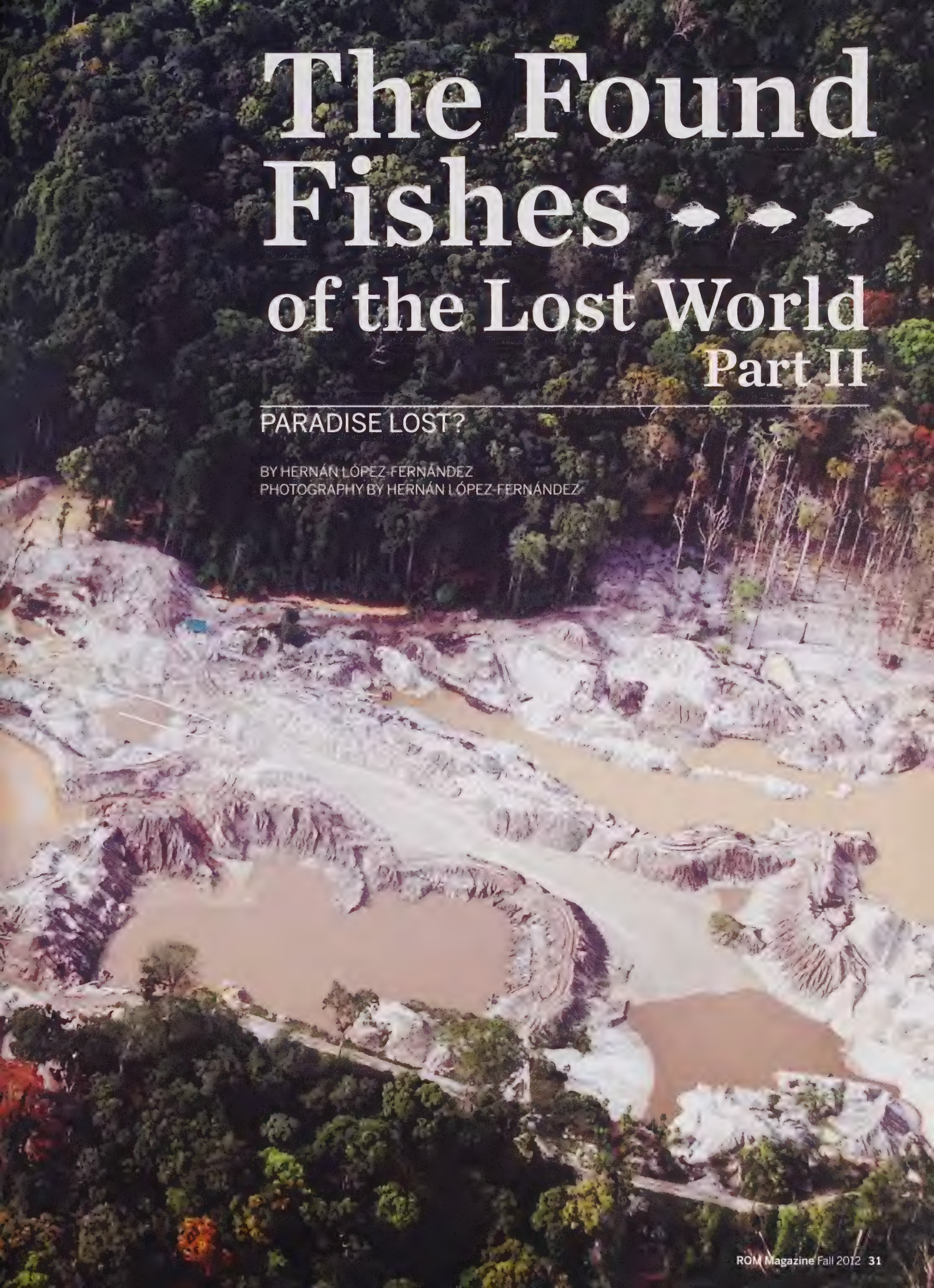
The Egyptian hieroglyphic art was recently digitized and forms the basis of a wall chart published by ROM Press, available in the ROM Museum Store, bookstores, and online. ISBN (English): 978-0-88854-375-2, $9.95; ISBN (French) 978-0-88854-493-3, $9.95.

*Deep in the rainforests of Guyana, ROM ichthyologist Hernán López-Fernández and his team discovered strange new fish species in the upper Mazaruni River area. Their three expeditions, in 2008 and 2011, yielded an astounding 27 species new to science. In his report on their findings (*ROM, *Summer 2012), Dr. López-Fernández revealed a paradise of biodiversity. Now, however, he records an unsettling development in the region—something that may have far-reaching implications for its flora and fauna.*

The Found Fishes of the Lost World Part II

PARADISE LOST?

BY HERNÁN LÓPEZ-FERNÁNDEZ
PHOTOGRAPHY BY HERNÁN LÓPEZ-FERNÁNDEZ



SEDIMENT IS SO THICK THAT THE VERY NATURE OF THE RIVER HAS BEEN ALTERED ALONG ITS ENTIRE COURSE . . .

Reality bites

Although excitement for the discovery of strange fishes dominated our team's first trip to the Mazaruni in 2008, it did not take us long to notice that gold mining was spreading along the length of the main channel. After leaving Phillipai and arriving at the town of Jawalla at the confluence of the Kukui and the Mazaruni, I wrote in my field notes:

April 21, 2008—Mining is widespread in the upper Mazaruni. The water in the main channel is murky, with mud floating on what used to be purely black water. There are many dredging operations very near Jawalla. They suck water from the river to blast the land on or near the banks, or they dredge the bottom. The resulting huge piles of sand and gravel end up forming elevated beaches on the banks. Each beach seems to have a channel in the back, which serves to drain the sediments blasted inland, or so I understand.

One of my last impressions of the river channel on that first trip was of something like a two-storey apartment building floating on the surface of the river in the middle of the night, lit with large halogen lights, strange booms and pipes jutting out of its walls. Gold-mining barges like this one work through the night sucking up sediment from the bottom of the channel. Each day they can pass up to 130 tonnes of sediment through a system on board that extracts the gold through treatment with mercury and then returns the treated sluice back into the channel. Looking at this alien thing we suddenly realized many of the beaches we had been fishing on were man-made. They were tailings created by accumulated sediment from the gold-mining operations. This last image of the river did not sit well with us because the effects of gold mining on rivers are well known and documented.

Gold mining is widespread along the banks of many rivers in South America, from the Amazon to the Andes to the Guiana Shield. The gold-mining industry of Guyana is dominated by small- and medium-sized gold-extraction operations that have skyrocketed from about a thousand in 2002 to nearly 2500 in 2009 and continue to grow, according to a recent report by Guyana's Geology and Mines Commission.

It takes a few minutes on Google to discover that prospecting by major players in the international mining industry is widespread and about to take extraction to levels not yet seen in Guyana. If gold extraction is performed with inadequate methods, if it is unregulated or has poorly enforced controls, the environmental effects will be devastating, as is already the case in parts of Guyana.

In the Cuyuni River, for example, sediment is so thick that the very nature of the river has been altered along its entire course, and entire families of fishes have become rare or nearly disappeared altogether. In the lower Mazaruni and Essequibo rivers, increased sediment loads as well as elevated amounts

Top left: *Ammocryptocharax vintonae*, one of the few fishes that already had a name when we arrived in the upper Mazaruni.

Left: A massive gold-mining camp on the banks of the upper Mazaruni.

Left: A large floating dredge used to extract gold from the sediment in the middle of the upper Mazaruni channel.

Below: Meeting of the waters: the pristine black waters of an untouched creek meet the main channel of the Mazaruni, which is loaded with mining-formed sediment.

of mercury on the river beds are a result of the amalgamation process used to extract gold from the soil and sediment.

Barges sucking sediment from the bottom are not the only means of extracting gold. Mining is also done from the channel outwards into the forest, by removing and sluicing the banks using horizontal, drill-like dredges. Water is also pumped overland and then used to blast the topsoil; the sluice is returned to the river where barges process it into mercury amalgam and eventually get pure gold. These last two methods of gold extraction require topsoil removal and therefore entail local deforestation. All sediment, either originally from the river or from the surrounding banks, ends up in the river channel.

Beyond the direct habitat alteration, what damages the fishes is the enormous amount of sediment that gets stirred, moved around, and dumped into the rivers. The increased amount of sediment in the water column can have a variety of negative effects on fishes, including abrading their gills, reducing visibility, limiting access to food, burying spawning sites, and reducing effective gas exchange between the fishes' eggs and the surrounding water. Overall, the turbid, mocha-looking waters created by the massive sediment load are very different from the clear or "black"—tea-coloured but transparent—waters in which fishes in these rivers have evolved. They simply cannot cope with the very different environment that is the end result of gold extraction.

BY THE TIME WE WENT BACK IN 2011, WE WANTED TO LOOK AT MORE THAN THE FISHES.

By the time we went back in 2011, we wanted to look at more than the fishes. This time the idea was to determine what habitats each species needed, and whether transformations from mining on the main channel were having an effect on the fish—or could in the future.

On both of our 2011 trips, we carefully recorded what species of fish were present in each part of the basin, measuring the same water chemistry attributes, habitat components, and other ecological details at each site. Data analyses are still ongoing and we should have a better idea of the ecology of the Mazaruni fishes within the next few months. We hope that identifying the ecological needs of the fishes will provide information useful for ensuring their survival. It's not clear yet whether mining operations have already affected the fishes of the upper Mazaruni or to what extent they will affect them in the future. But we have recorded a large increase in the sediment load along the main channel of the upper Mazaruni when compared to tributaries where mining is not performed. Species endemic to the upper Mazaruni evolved to live in the originally black and pristine waters of the region, and if changes to their ecosystem are significant these extraordinary fishes may be in trouble.

We hope that is not the case. On a planet where few such opportunities remain, we have had the rare privilege of discovering a large amount of previously unknown biodiversity. Sadly, we have also witnessed firsthand how even the most remote pockets of the world can be altered by human doings. Although they are not as shiny as the nuggets of gold being taken from the river, I really hope we will not lose the fishes we just found in the Lost World. o

ACKNOWLEDGEMENTS: Work in the Mazaruni was possible thanks to the tireless field team in the river: Don Taphorn, who suggested the title "The Found Fishes of the Lost World," Elford Liverpool, Shannon Refvik, June Enright, and Clydon Thierens None of us would have known where to go without the guidance and support of Kelly, George, and Mary Kramer, or the welcoming attitude of the Akawaio Amerindian communities in the villages of Kamarang, Kako, Jawalla, and Phillipai. Funding for work in the Mazaruni was provided by the U.S. National Science Foundation (2008) and by a Conservation Grant from the Schad Foundation through the ROM (2011).

Never seeing my son play hockey again. That was my first thought when I got my results. But because I regularly schedule thorough exams, my Mayo Clinic doctor was able to catch the problem in time. My answer was Mayo Clinic.

JOHN HENDERSON
Vancouver, British Columbia

Like John, you have full access to Mayo Clinic's world-class health care. As a not-for-profit organization, we have been putting the needs of our patients first for nearly 150 years. Our expert teams of specialists and premier medical facilities are available to you for diagnosis or treatment of a serious condition, a comprehensive wellness exam, or even a second opinion. In most cases, a physician referral is not needed. To make an appointment please visit mayoclinic.org/canada or call 1.888.441.2133. If you want to connect with others who've been there, please visit connect.mayoclinic.org/

PHOENIX/SCOTTSDALE, ARIZONA ROCHESTER, MINNESOTA JACKSONVILLE, FLORIDA

MAYO CLINIC

Life in Crisis: Schad Gallery of Biodiversity

BY DAVE IRELAND

Biodiversity is at risk. Species ranging from endangered to extinct are on display in the gallery.

Museums are in a position to help define the beginning of a new period of geologic time, the proposed Anthropocene. To date, all human culture—our written history, our massive population growth, and the movement toward urban life—has been contained within the Holocene Epoch (c. 12,000 years ago to the present). Scientists in several geological societies suggest that the impact of the human species has been so profound on our planet—our atmosphere, lands, and water—that a new age in the Geological Time Scale of Earth should be defined.

Natural history museums in the 21st century have a responsibility to address the disproportionate and significant impact of human beings on all other life, and to identify the Anthropocene as a time when extinction rates are reaching unprecedented levels. There have been five mass extinctions during the past 540 million years, and we explore the latest one, 65 million years ago, with our *Ultimate Dinosaurs* exhibition. We suggest in the exhibit that the "Sixth Mass Extinction" event is underway. E. O. Wilson, famous Harvard biologist, certainly agrees; he predicts 50 percent of "Earth's higher life forms" could be extinct by 2100. Perhaps the most significant event in the Anthropocene will be the next mass extinction.

The Life in Crisis: Schad Gallery of Biodiversity is our space to explore the concept of the Anthropocene. The Schad Gallery is a natural history gallery, but one that includes human development, behaviour, and culture in every story. From agriculture, domestication, and habitat loss, to invasive species and climate change, humans are the dominant cause for current extinction rates. But we can also be part of the solution, and the Schad Gallery provides a platform for staff to tell stories of discovery, adventure, and hope. More than 2,500 beautiful specimens provide the backdrop, while videos, interpreted stories, and participatory public programs provide the interface to engage visitors.

Within the Schad Gallery is the Earth Rangers Studio, an open, multimedia, workshop space. The Studio is used to exchange ideas and information with our visitors. Curator's Corner, an example of a program held within the space, showcases ROM curators—their expertise, their incredible field experiences, and the questions they seek to answer in their work.

A recent Curator's Corner was hosted by a multi-disciplinary team of ROM biologists working in Guyana, one of whom, Dr. Burton Lim, a mammalogist, was in the rainforests of Guyana at the time (communicating with the public via satellite phone). Dr. Hernán López-Fernández, an ichthyologist (see "The Found Fishes of the Lost World," page 30), and herpetologists Amy Lathrop and Ross MacCulloch were on hand in the Studio, showing "out-of-the-vault" specimens and telling stories about new discoveries in the rainforests and human impacts in the region.

Schad Gallery activities and programs extend into the local and global communities as well. With partners from WWF-Canada, we "transported" the Schad Gallery (more than 50 specimens) to the Green Living Show (Toronto, April 13–15, 2012), North America's largest green consumer trade show. Another recent program took place in Rouge Park, where ROM biologists led Canada's largest ever BioBlitz, a 24-hour survey of all life in a given area. We documented more than 1,350 species, including species never before documented in the Toronto area (see "Where There Is Life," page 36).

As we proceed through the Anthropocene, spaces like the Schad Gallery will become more and more important for community dialogue and trusted outreach. ○

DAVE IRELAND is managing director of the Schad Gallery.

The Life in Crisis: Schad Gallery of Biodiversity was made possible with funding from the Robert Schad Foundation.

Where There Is Life

First Toronto BioBlitz attracts record number of participants and identifies record number of species

BY BRENNAN CAVERHILL

Leopard frog (*Rana pipiens*), one of the many specimens found during the Rouge Park BioBlitz 2012. See also sphinx moth (below), as well as snail and larva (facing page).

"It's wild in the city," says Dave Ireland, managing director for the Schad Gallery of Biodiversity. "Rouge Park is one of the most biodiverse regions in the Greater Toronto Area." Ireland's claim was confirmed in spades at the first annual Rouge BioBlitz, in June 2012.

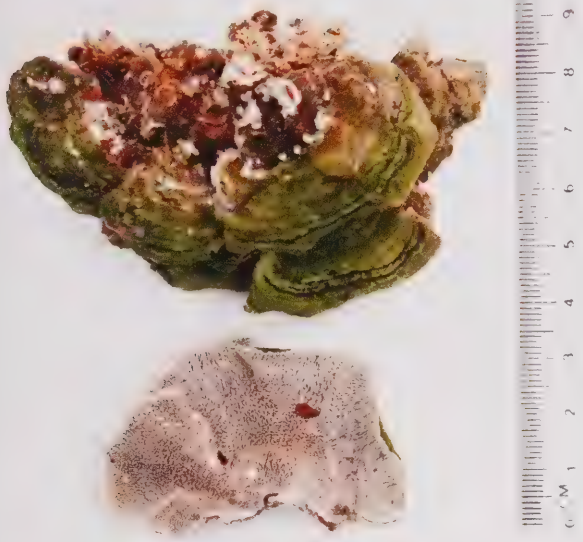
Biodiversity is the variety of life at all biological levels, from the gene to the ecosystem. Over the course of 24 hours, beginning on Friday, June 15, at 3 pm, experts and volunteers in biology and natural history converged on Rouge Park to document the region's biodiversity. More than 225 people, aged two to 72—from the ROM, the Toronto Zoo, Ontario Nature, the Ontario Ministry of Natural Resources, universities, conservation authorities, and the community—joined forces to attempt to document all living things in the park and also to educate the public about the variety of life and its value.

The BioBlitz concept began in the 1990s and similar events have occurred around the world over the past two decades. Rouge BioBlitz 2012 was the biggest in Canadian history in terms of the number of participants and the number of species identified. More than 1,350 unique organisms have been confirmed to date, and that number continues to rise as specimens collected during the event are verified by experts across Ontario.

Virginia creeper sphinx moth (*Darapsa myron*)

Banded grove snail
(*Cepaea nemoralis*)

Purple-toothed polypore
(*Trichaptum biforme*)



The ROM had an impressive presence at BioBlitz. Dave Ireland was the project leader, while staff from the Department of Natural History were invaluable in the field. Experts and leading researchers on all forms of life—including mammals, birds, reptiles, amphibians, fish, plants, and invertebrates— collected, identified, catalogued, and listed as many species as possible. The result shows an impressive variety of life forms in the park.

Antonia Guidotti, entomology technician at the ROM, knows this was no small task, especially for smaller and more numerous creatures: "It's an enormous undertaking, trying to determine all of the insect and spider species alone, in such a hugely diverse area, in only 24 hours!"

Claire Healy, associate curator of invertebrate biology at the ROM, used the BioBlitz as an opportunity to search for less familiar animals, such as "tiny aquatic rotifers (wheel animals), and parasites that live on or in other animals." She revels in the knowledge that a single individual, such as a turtle or a fish, can actually be home to as many as a dozen other species.

"Don't forget humans—we're animals too!" Healy added. *Homo sapiens*, and our warm-blooded, fur-covered mammal brethren, were also well documented, as were other "charismatic mega-fauna," including the threatened milksnake and Blanding's turtle, and the more common otter, beaver, squirrels, and bats.

BioBlitz your backyard! Chances are you'll find a good sample of the species discovered within the borders of the Rouge Park—especially if you are a good steward of your property. A BioBlitz will help you and your family understand our native biodiversity and appreciate the flora and fauna with which we share the land.

To see more of what happened at the Rouge BioBlitz this year, to sign up for next year, or to learn more about biodiversity and the BioBlitz concept in general, visit **www.ontariobioblitz.ca**. ○

BRENNAN CAVERHILL is a professor in the Environmental Visual Communication program at Fleming College and an assistant for ROM biodiversity programs.

Partners:

Royal Ontario Museum · Fleming College · toronto ZOO (Same planet. Different world.) · Rouge Park

The energy and enthusiasm of BioBlitz participants and the variety of species collected were digitally documented using photography and video by students in the Environmental Visual Communication (EVC) program at Fleming College, hosted by the ROM. Currently in its inaugural year, the EVC program is designed to develop environmental and conservation advocates who can effectively communicate the complexities and significance of scientific knowledge to a variety of audiences, from elementary school students to politicians. EVC students learn about strategic messaging and design principles and become technically savvy in photography, videography, and multimedia. These budding science-artists and communicators document experts at work along with the species they study in the lab and in the field. To learn more about the program, visit **www.eviscomm.ca**.

Photos: Snail by Evan Hall. Fungi by Brooke Allen. BioBlitz photos courtesy EVC, Fleming College: Brennan Caverhill, Erika Hild, Stacey Lee Kerr, Sheena Kooner, and Joshua See.

In the ROM Stores

World cultures and natural history

BY CONNIE MACDONALD

ROM MEMBERS RECEIVE A 10% DISCOUNT IN ROM SHOPS

1. MALAIKA WEDDING NECKLACE FROM THE ME TO WE ARTISANS COLLECTION
Handmade by African Maasai mamas for Canadian charity Free the Children. $99.99.
ROM Member price $89.99.
Why we love it! Stunning worn as a necklace or framed as an art piece.

1

2

2. FEATHER HEADDRESS
A replica 20th-century feather headdress from the Republic of Cameroon, West Africa. $699.99.
ROM Member price $629.99.
Why we love it! Makes a spectacular wall feature.

3

The *Ultimate Dinosaurs* Boutique offers sophisticated products for everyone, from the design-savvy to the serious dinosaur aficionado. Dinosaur-related treasures include jewellery and apparel as well as stylish décor equally suitable for home or office. Selections of fossils and dinosaur reproductions conjure the ancient world of Gondwana. African and South American cultural products reflect the vibrant cultures that inhabit those landscapes today. Be sure to visit the ROM stores this fall to please everyone on your gift list. o

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CONNIE MACDONALD is assistant vice-president of Hospitality & Commercial Services at the ROM.

3. HUGE PLUSH *APATOSAURUS*
Spectacular *Apatosaurus*—striking, handcrafted, mega-sized plush toy designed and fabricated based on its prehistoric predecessor. $1,299.99.
ROM Member price $1,169.99.
Why we love it! Wow factor for any space.

4

4. PETRIFIED WOOD TABLE
This elegant high-style cocktail/end table features a petrified wood top with *faux bois* and chrome legs. $2,999.99.
ROM Member price $2,699.99.
Why we love it! Unique designer item suitable for both modern and traditional settings.

5

5. DINO HEAD WALL PLAQUE
Decorate your child's bedroom or the rec room wall with this high-quality lifelike 3-D *T. rex* head. $99.99.
ROM Member price $89.99.
Why we love it! So real . . . and no roar.

6

6. *TYRANNOSAURUS* SKULL
Dynamic reproduction of a *Tyrannosaurus* skull set on a presentation base. $399.99.
ROM Member price $359.99.
Why we love it! Prehistoric *objet d'art*, perfect for the corner office.

All items listed on this page are available at the **ROM Museum Store**

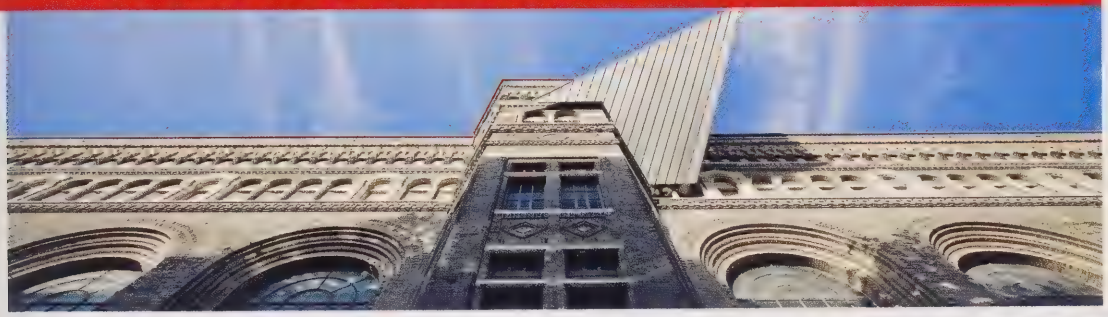
Store Hours: 10 am to 6:30 pm, except Friday 10 am to 9 pm. **Kids Store:** Monday to Sunday, 10 am to 5 pm, except Friday 10 am to 8 pm. Check out our online boutique at **store.rom.on.ca**

FOR OUR

members

The latest offers and information

NEWS / EVENTS / SPECIAL OFFERS / **TRAVEL**



A MESSAGE TO OUR MEMBERS

Communication

Spreading the word

Over the past number of months we have been looking seriously at how we communicate with you, our Members. Specifically, we have considered the overall appearance of our communications, their content, and their desired end result.

I am sure you will have noticed a number of changes in our e-newsletter and in our direct-mail pieces. Our goal in communicating with you is to tell the stories of both what is happening in the galleries and what goes on behind the scenes. As Members, you are invested in the Museum financially and emotionally. We are striving to give you a return on that investment by sharing as much as we can of all the incredible work that is done at the ROM.

Members are many things to the Museum, but their most important roles are as ambassadors and advocates. In preparing the *Ultimate Dinosaurs* exhibition, we held a focus group made up exclusively of Members. Their input was invaluable and significantly impacted the way we approached this exhibition. The comments they shared with us were insightful and extremely helpful in planning how to engage with our visitors.

We want to communicate with you about Museum issues so that you get the facts first. We hope that you will use this information to promote the Museum as a place of interest and learning. In addition, we hope that you will share your stories of the wonderful experiences and activities at the ROM and encourage your friends and family to make the ROM a part of their lives.

As always, your opinions and input are important to us, so feel free to get in touch and let us know what you think.

Martha Henderson

MARTHA HENDERSON
HEAD OF MEMBERSHIP AND SALES

BELONG AT THE ROM

FREE FOR MEMBERS

ROM MEMBERS RECEIVE FREE UNLIMITED ADMISSION TO *ULTIMATE DINOSAURS: GIANTS FROM GONDWANA*
See page 40 for details.

FACE TO FACE

AN EXCLUSIVE EVENT SERIES FOR ROM MEMBERS
See page 40 for details.

MEMBER INFORMATION

MUSEUM MEMBERSHIP RATES
Individual: 1 year $97; 2 years $172
Family/Dual: 1 year $149; 2 years $269
NEW! Senior Family: $145
Non-Resident: 1 year $102; 2 years $183
Student: $54
Curators' Circle: $189
Museum Circle: $323
Director's Circle: $626
Young Patrons' Circle: $600+
Royal Patrons' Circle: $1,800+
Explorers' Club: $15 (in addition to ROM Membership)

TELEPHONE NUMBERS
Switchboard: 416.586.8000
RPC and YPC: 416.586.5842
Bell Relay Service: 711
School Groups: 416.586.5801
Museum Volunteers: 416.586.5513
ROM Museum Store: 416.586.5766
c5 Restaurant/Lounge Members Reservation Line: 416.586.8095
Donations: 416.586.5660

Membership Services:
416.586.5700
membership@rom.on.ca
rom.on.ca/members

Illustration of *Carnotaurus* by Julius T. Csotonyi. © ROM 2012.

Attention Members: Your privacy is important to us. The Royal Ontario Museum (ROM) and the ROM Governors (the ROM's charitable foundation) share a special relationship and you may receive additional information from each.

If you do not wish to receive it, contact membership@rom.on.ca or call 416.586.5700.

Occasionally, we make our list of supporters available to other carefully screened cultural organizations and selected groups that may be of interest to you. Please understand that by allowing us to exchange your name, you are helping us support the ROM's education and research mandates. If you prefer not to have your name exchanged, please contact us at membership@rom.on.ca or at 416.586.5700.

The ROM Membership Department operates a telemarketing office. Should you prefer not to be contacted by telephone, please contact us at the e-mail address or phone number listed above and we will have your number removed from our list

For Our Members

NEWS

Ultimate Dinosaurs: Giants from Gondwana

Ticketing for ROM Members

ROM Members receive unlimited free admission to *Ultimate Dinosaurs: Giants from Gondwana*. Members are not required to book advance tickets. However, if you wish to reserve tickets in advance for yourself or your guests, you may do so by visiting **rom.on.ca/dinos/visit**.

Plan Your Child's Next Birthday Party at the ROM!

Experience a one-of-a-kind party! Spend the day exploring the galleries, enjoying a private tour, or participating in a scavenger hunt.

Special Member Offer

ROM Members receive free admission to the ROM—all those covered under your membership pay only for their meal and added birthday activities! For more information, call 416.586.5801 or e-mail groupsales@rom.on.ca.

Cost: Guided Tours $5*, Scavenger Hunts from $5**; Pizza Lunch from $9.95*.
* Cost per person; minimum of 20 paid guests.
** Cost per person; minimum of 50 paid guests or flat rate $250.

Special Offers for Members

Free General Admission to Six Canadian Museums and Art Galleries

ROM Members can enjoy free general admission to the Art Gallery of Nova Scotia, the Glenbow Museum, the Kamloops Art Gallery, the McCord Museum of Canadian History, the Montreal Museum of Fine Arts, and the Vancouver Art Gallery. Admission may not include guests, entrance to blockbuster exhibitions, or ticketed programs and events.

2-for-1 Admission for ROM Members

ROM Members receive 2-for-1 admission at the Gardiner Museum plus a 10% discount at the Gardiner gift shop.

ROM Explorers' Club Event

BLASTOFF!

Saturday, October 27, 2012, 10 am–2 pm

Join us for a day of stellar crafts, activities, and more. With stargazing and space rocks, it's sure to be out of this world! Free and exclusive to ROM Explorers' Club Members. Adult accompaniment required. When registering, please indicate the number of children that will be attending. To register, call 416.586.5700, or visit **rom.on.ca/explorers**.

Exchange Days

This fall, ROM Members are invited to attend free days at three of Ontario's cultural institutions:

McMichael Canadian Art Collection
Saturday, October 13, 2012
Complimentary admission will include the McMichael's renowned permanent collection and special exhibitions. Guest privileges do not apply. Parking $5. For more information, please contact the McMichael Canadian Art Collection at 905.893.1121 (ext. 2207), or visit **www.mcmichael.com**.

Gardiner Museum
Saturday, October 20, and Sunday, October 21, 2012
Free admission does not include guest privileges. For more information, please contact the Gardiner Museum at 416.586.8080, or visit **www.gardinermuseum.com**.

Art Gallery of Ontario
Saturday, November 3, and Sunday, November 4, 2012
Complimentary admission includes the AGO's permanent collection, free coat check, access to the Norma Ridley Members' Lounge, and member discounts in the AGO restaurant, café, and shop. For more information, please contact the AGO membership office at 416.979.6620, or visit **www.ago.net**.

FACE 2 FACE

Exclusive Event Series for ROM Members

Face to Face is a series of free gallery walks and talks. Members meet with ROM experts for a guided walk through the ROM galleries to hear interesting stories about their latest research, recent acquisitions, or favourite objects. The walks begin at 11 am and are approximately 45 to 60 minutes long, including time for questions.

Upcoming dates:

September 18, 2012
Face to Face with Paul Denis: Sailing to Byzantium

October 16, 2012
Face to Face with Trudy Nicks: Sovereign Allies/Living Cultures: First Nations of the Great Lakes

November 20, 2012
Face to Face with Kim Tait: To the Moon and Back

Registration is required as space is limited. To register, call 416.586.5700, or visit **rom.on.ca/whatson**.

Valid ROM membership card(s) and ID must be presented upon arrival at all institutions.

Illustration of *Cryolophosaurus* by Julius T Csotonyi © ROM 2012. Photo of Art Gallery of Ontario by [illegible]

NEWS

Insiders Walks Exclusively for ROM Members

Back by Popular Demand for a Limited Time!

Instruments and Architecture: An Insiders Walk

Explore architecture with a musical theme by touring interiors of the ROM, the Royal Conservatory of Music, and the Edward Johnson Building of the Faculty of Music, University of Toronto. Due to its popularity, this walk will be repeated on three occasions so that you can choose the day that best suits your schedule.

Sundays at 2 pm
Dates: November 25, 2012, January 27, 2013, and March 24, 2013.

French horn by Mike Wiggins/iStock.

Stained glass window of Christ with the Centurion, Church of the Redeemer, Toronto.

NEW

Let There Be Light: Stained Glass Windows and Architecture

Join us in viewing the architecture and stained glass of the ROM and Toronto's Church of the Redeemer. You will have an opportunity to see a rare set of Pre-Raphaelite windows by Henry Holiday in the Lillian Massey Building, University of Toronto.

Wednesdays at 1 pm
Dates: November 28, December 12, 2012, January 30, February 27, and March 20, 2013.

Tours are open exclusively to ROM Members. For all Insiders Walks, meet in the Rotunda, Level 1, and look for the blue ROMwalks umbrella. Registration is required as numbers are limited. To register, call 416.586.8097, or visit **rom.on.ca/whatson**.

Holiday Gift Promotions

WITH THE HOLIDAY SEASON APPROACHING, GIVE THE PERFECT GIFT!

ROM Membership

The Gift That Gives All Year Long!

Your friends and loved ones will enjoy ROM treasures all year long—membership includes free unlimited admission to ROM galleries and blockbuster exhibitions such as *Ultimate Dinosaurs: Giants from Gondwana*; exclusive Member Previews; a free subscription to *ROM* magazine and *Let's ROM*; discounts in ROM shops and restaurants, and on programs, lectures, and events. ROM Members save up to $20 on the purchase of gift memberships. For more information, call 416.586.5700, or visit **rom.on.ca/members**.

Already a Member? Consider the ROM Explorers' Club!

A cool club just for kids. $15 per child per year. Available to ROM Members only. For more information, call 416.586.5700, or visit **rom.on.ca/explorers**.

ROMkids

Give a night at the Museum with a ROM Sleepover or Saturday Morning Club. Or, give a gift certificate towards any ROMkids program of their choice. ROM Members receive a 10% discount on all ROMkids programs. For more information, call 416.586.5797, e-mail programs@rom.on.ca, or visit **rom.on.ca/romkids**.

Be the Office Hero

Discount Offer for Corporate Social Events

ROM Members receive special rates on Museum admission when booking a team-building scavenger hunt or renting a private event space. Share this discount offer with your corporate social committee, meeting planner, or event planner.

Scavenger Hunts

ROM Scavenger Hunts' tricky questions and team challenges will bring your staff together in an exhilarating game.

Meetings and Events

Hold your next meeting or event among the ROM's priceless collections—it will leave a lasting impression!

BOOK TODAY!

Call 416.586.5801 (ext. 2), or e-mail groupsales@rom.on.ca. Offer expires December 31, 2012.

Members' Annual Shopping Weekend

Special 20% Discount–3 Days Only!

November 30–December 2, 2012

Start your holiday shopping early. For one weekend only, ROM Members will receive 20% off all regularly priced merchandise in ROM shops. Light refreshments will be available in the ROM Museum Store on Level 1.

Shopping for the kids? Be sure to visit the temporary Dinosaur Shop located inside the exhibition *Ultimate Dinosaurs* on Level 2B and the Kids Shop on Level 2 just outside the Bat Cave.

ROM MuseumStore

PROGRAMS

Family Gathering

Sunday, December 2, 2012, 10 am–2 pm
An exclusive event for Museum Circle, Director's Circle, Royal Patrons' Circle, and Young Patrons' Circle Members.

Mark your calendars for our annual Family Gathering. You and your family will enjoy fun crafts and activities, festive treats, and a visit from Santa. Invitations will be sent by e-mail and are for up to 4 adults (one must be the cardholder) and 4 children. Invitations are non-transferable.

Registration is required. To register, call 416.586.5700, or visit **rom.on.ca/whatson**.

What are ROM Friends?
Friends are a variety of affiliate groups within ROM membership. Available to ROM Members only, each group offers exclusive programming beyond a Museum membership. Cost: $57 per group per year. For details, call 416.586.5700, or visit **rom.on.ca/friends**.

ROM Friends

Friends of the Canadian Collections/ Amis des Collections Canadiennes

Dave Ireland and the "Canadian" Bison
Wednesday, September 19, 2012, 2 pm
Presenter: Dave Ireland
Location: ROM Glass Room
Come and hear Dave Ireland talk about North America's largest land animal—the North American plains bison—and then tour the Schad Gallery of Biodiversity. Dave Ireland is managing director of Biodiversity for the Life in Crisis: Schad Gallery of Biodiversity.

For FCC/ACC members only. Registration required. For more information, call 416.586.5700, e-mail membership@rom.on.ca, or visit **rom.on.ca/whatson**.

Friends of Textiles & Costumes

Royal Processions and Rural Replicas: Monumental Card-weaving in Ethiopia (the Gondar Tapestry)
Friday, October 19, 2012, 5–7 pm
Presenter: Dr. Michael Gervers
Location: ROM Education Classrooms 3 and 4
Dr. Michael Gervers is a medieval historian and art historian at the University of Toronto. His scholarly

interests have taken him to Ethiopia, where he studies the ancient Orthodox Christian rock-cut and monolithic churches. These neglected churches contain rare and beautiful treasures such as the so-called Gondar tapestry, a c. 1730 treasure donated to the Museum in 1922. His presentation will focus on these exquisite card-woven or tablet hangings and their iconography.

Free to FTC Members. All others $20. Registration is required by all. To register, call 416.586.5797, or visit **rom.on.ca/whatson**.

ROMTRAVEL

Top of the World

BHUTAN, NEPAL, AND TIBET

For centuries, in their quest for inspiration, solitude, happiness, and the wisdom of the Buddha, travellers have been drawn to these remote lands, known as the "abode of the gods," cradled in the folds of the snow-capped Himalayas, in landscapes of natural and pristine beauty.

In Bhutan, explore the magnificent, vibrant culture of this hidden land, venturing through villages and towns, visiting cliff-top monasteries, museums, and cultural centres that illustrate unique architectural and artistic traditions. The valleys along the Dochula mountain pass from Thimpu to Punakha in Bhutan are scattered with rhododendrons and star magnolia trees in vivid splashes of pink, orange, red, and white, providing a stunning background to the mighty Punakha *dzong* (fortress), temples, and *chortens* (stupas) along the route.

Nepal's six UNESCO World Heritage Sites show the influences of Hinduism and Tantric Buddhism. All these sites are filled with monumental structures, alluring and exquisite paintings, wood carvings, masonry columns, terracotta windows, and bronze statues of deities. The Swayambhunath stupa, with its golden spire, located on a conical hill, is the most holy shrine in Kathmandu Valley. The Boudhanath stupa is one of the holiest places of worship for Tibetan Buddhists. A jungle safari by elephant-back, canoe, and jeep in Chitwan National Park shows the astonishing biodiversity of this region. The park is host to an amazing array of flora and fauna; its many species of birds and animals include the stunning Asian paradise flycatcher, the Asian rhinoceros, and the Bengal tiger.

Dance of the black hats with drums, at the Paro Tsechu festival of dances.

In Lhasa, located in the middle of the Tibetan Plateau, explore the Potala Palace and Jokhang Temple, both UNESCO World Heritage Sites, and the Drepung and Sera monasteries.

While these magical moments can be captured on camera, no mere photo can adequately convey the feeling of being at the "top of the world."

> **October 6–24, 2013**
Cost: $11,270 (International flight costs NOT included)
For more information, call ROMtravel at 416.586.8034, e-mail travel@rom.on.ca, or visit **rom.on.ca/programs/rom_travel**.

Upcoming trips
South Africa March 1–16, 2013
Argentina April 7–23, 2013
Tuscany and Umbria April 7–21, 2013
The Arctic July 27–August 6, 2013
Chicago September 23–27, 2013
Chile January, 2014
South India and Sri Lanka February, 2014
Savannah and Charleston April, 2014
Southern Spain and Morocco April, 2014

Photos: Gondar Tapestry, ROM 926.261, Paro Tsechu by Stephen Stepanek

FROM THE

rom governors

OUT OF THE OFFICE AND INTO THE FIELD

AN EPIC ADVENTURE IN ALBERTA WITH A CREW OF ROM DINOSAUR HUNTERS

The summer months are usually busy ones for ROM palaeontologists and this year was no exception. When I was given the rare opportunity to join Dr. David Evans, the ROM's curator of vertebrate palaeontology, on a research trip to the badlands of Alberta—I jumped at the chance. Conjuring up images of discovering buried treasure and fighting off rattlesnakes in Canada's Wild West, I had no idea what to expect.

In late July, I was able to join David and his crew of 15 enthusiastic undergraduate and graduate students and local volunteers on a mission to dig for Cretaceous dinosaurs. Alberta is famous for rich deposits of fossils and dinosaur bones, which we helped excavate using intricate tools at various sites. Uncovering the fossils of a new species of dinosaur with breathtaking landscapes and scenic hoodoo rock formations in 40-degree temperatures made this trip one of the most memorable experiences of my life.

Seeing ROM research in action also gave me an honest appreciation not only for curatorial fieldwork, but also for the strong connections between the original research of our curators and the Museum's engaging galleries, content, and public programs. This summer alone more than 10 curators and their students are in the field in locations as varied as Borneo, Guyana, China, Peru, and Yemen.

Dr. David Evans wasn't the only ROM palaeontologist out in the field this summer—David Rudkin, assistant curator of invertebrate palaeontology, joined colleagues in central Manitoba to study unusual Ordovician fossils, and Dr. Jean-Bernard Caron, curator of invertebrate palaeontology, led an international team in a search for new Burgess Shale fossil localities in Cambrian rocks of British Columbia.

I am back in the office now, and honoured to be working once again with the volunteers and benefactors who enable us to bring our research and expertise front and centre for the world to experience. The future Peter F. Bronfman Gallery of Early Life, scheduled to open at the ROM in 2014, will be the newest gallery to showcase the incredible work and insights of ROM curators.

Dianne Lister

DIANNE LISTER
PRESIDENT AND
EXECUTIVE DIRECTOR,
ROM GOVERNORS

Top left: Dianne Lister on a hot windy day in the Alberta badlands.

Left: Dr. David Evans (third from right) with ROM colleagues excavating a 60-foot hill in southern Alberta.

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CURRELLY SOCIETY : VERA KIRCHEIS

A Lifetime of Giving

Vera Kircheis' energy and laugh are infectious. The more time you spend with the vibrant 87-year-old, the more apparent her love for art, history, and travel becomes. Vera's appreciation of culture and unique objects started early. "My father was a collector but many things were lost during the war and before that in a major earthquake," she recalls.

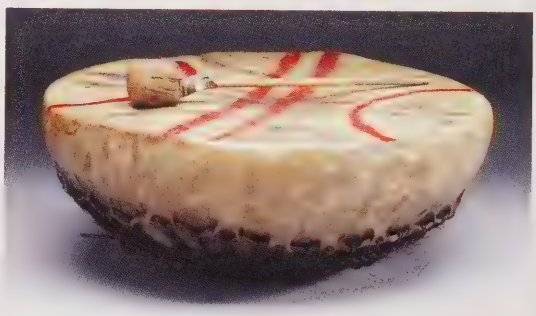
Vera and her husband, Albert, came to Canada from Germany in 1951 to escape the turmoil in Europe. Eager to succeed in her new country, Vera quickly found work as a secretary in a paint factory. On her way home from landing the job, she bought a basket of peaches to celebrate. "They only cost me 52 cents!" she says, laughing. Albert was later hired by the same factory, which launched his successful career and eventually resulted in the couple's own export business.

As their business grew, so did their family and their relationship with the ROM. Lifelong students and aficionados of art and culture, Vera and Albert became members of the ROM in 1971—what Vera calls the "steal of the century." A member of the Currelly Society since 1994, she is part of a group of individuals who have promised future gifts to the Museum. "Soon after we came to Toronto, we ran into a distant relative who told us we had come to the best country in the world," says Vera. "We have been very blessed here and we wanted to give back."

Vera and her husband travelled extensively in Latin America, Central America, and the Caribbean to support their business. In 2006, they established the Kircheis Family Endowment Fund. This transformational gift supports the ROM's research and acquisitions in Latin America, particularly in Guatemala, El Salvador, Costa Rica, Panama, and Cuba. It's a way of expressing the family's strong attachment to the area where much of their business was based. Vera also speaks fondly of trips taken with ROMtravel, visiting natural wonders in Asia and Africa.

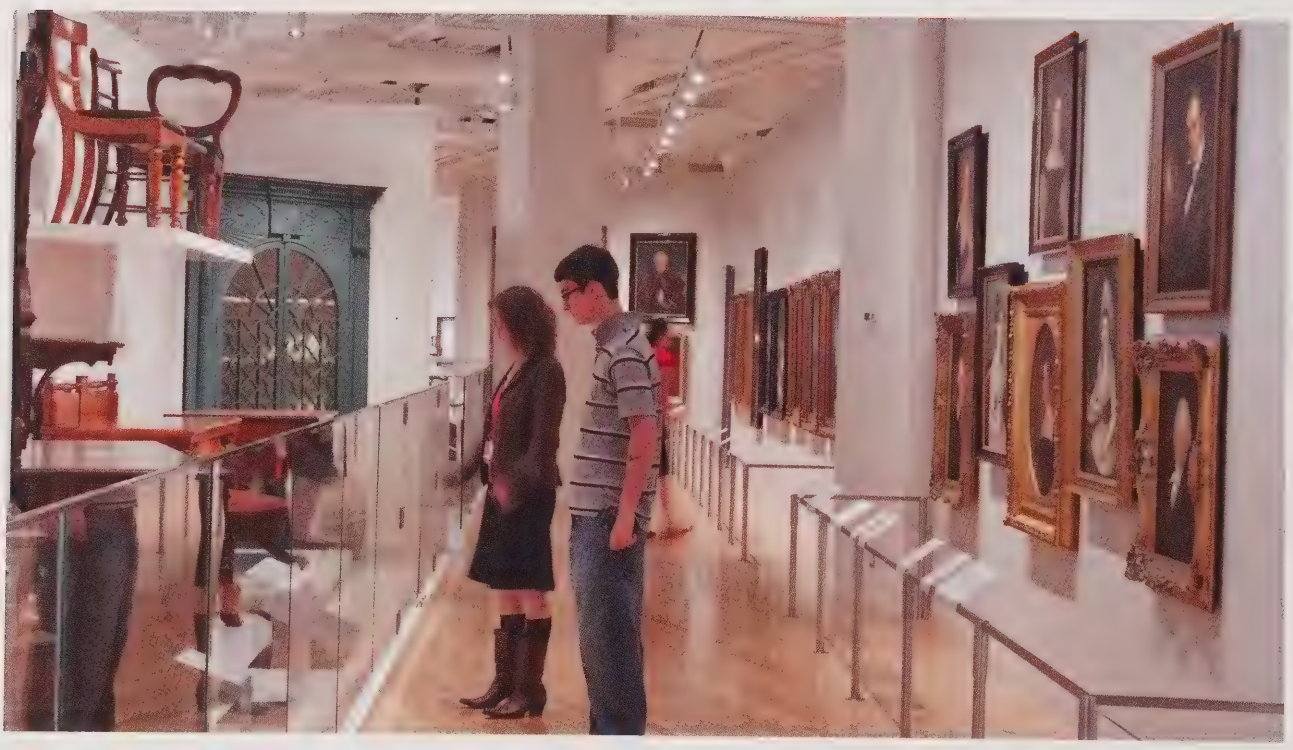
Today, you can often find Vera roaming the Sigmund Samuel Gallery of Canada or attending a Currelly Society lecture. Through her membership in the Currelly Society, Vera is ensuring that her lifetime of giving through the Kircheis Family Endowment Fund will leave a lasting impact at the ROM for years to come.

Vera Kircheis with her late husband, Albert.



Ceremonial drum and beater from southern Chile. Research in Latin America is generously supported by the Kircheis Family Endowment Fund.

To discover more about the Currelly Society, please contact Janice Correa at 416.596.5578 or janicec@rom.on.ca.



Visitors in the Sigmund Samuel Gallery of Canada—a favourite of Currelly Society member Vera Kircheis.

Photo: Drum and beater, ROM 971.166.381, gift of the Toronto Diocesan Anglican Church of Women

Robert Pierce: Chairman of the Board of Governors

The ROM is pleased to welcome Robert Pierce as the new chairman of the Board of Governors. As a long-time volunteer, board member for more than 12 years, and supporter of the ROM, Rob has served in a leadership capacity on several philanthropic committees and initiatives, including the Renaissance ROM Countdown to Completion Task Force, the Finance and Investment Committee, the Museum's signature fundraising event, *Fact? or Fiction?*, and the Royal Patrons' Circle (RPC) Committee. Over the past decade, Rob has led by example, generously supporting the ROM's highest priorities and philanthropic projects.

Rob is excited about the Museum's future and his new role with the Board of Governors. "When we talk about Canada, let's talk about the ROM," he says. "It has a great location, content, architecture, and leadership. As we prepare for the ROM's centennial year in 2014, now, more than ever, the Museum deserves everyone's attention and support."

The Board of Governors is also pleased to welcome new Governors Salvatore Badali, John Bianchini, Robert Keilty, and Thor Eaton.

Photo: *Fact? or Fiction?* by Ryan Walker Photography.

Fact? or Fiction?

OCTOBER 16, 2012

The ROM's signature fundraising event, *Fact? or Fiction?*, returns on Tuesday, October 16, 2012. Guests can expect the same great guessing game but with an exciting new twist. Get ready to match wits with 15 pairs of clever curators in an effort to determine the true nature or purpose of mysterious artifacts and objects from the ROM's vaults.

NEW! The answers will be revealed and the lucky winner announced at a gala dinner with ROM experts seated at each table. Reserve your table today for this lively event in support of ROM research and educational programs. To purchase a table, contact Keiko Okutsu at 416.586.8064 or keiko@rom.on.ca. For more information visit, **rom.on.ca/factorfiction**.

RUN for the ROM!

OCTOBER 14, 2012

Join your colleagues, family, and friends for the Scotiabank Toronto Waterfront Marathon Group Charity Challenge! Register to raise funds in support of the ROM's highest priorities, such as the future Peter F. Bronfman Gallery of Early Life, scheduled to open during the Museum's centennial year in 2014. Run or walk with us on Sunday, October 14, 2012, pledge your support for one of our participants, or make a donation directly to the ROM.

For more information on how to register, make a donation, or support a ROM runner, please visit **www.torontowaterfrontmarathon.com**, or contact Keiko Okutsu at 416.586.8064 or keiko@rom.on.ca.

SUPPORT

New YPC Chair: Anna-Maria Kaneff

Anna-Maria Kaneff, chair of the Young Patrons' Circle, in the Joey and Toby Tanenbaum Gallery of Byzantium.

Coming up: YPC members see first-hand what goes on out of public view at a world-class museum such as the ROM. This fall's first event, Cabinets of Curiosities, is a Patron favourite and takes place on Wednesday, September 12, 2012. YPC members will go "backstage" into the Louise Hawley Stone Curatorial Centre for an in-depth look at the ROM's collections and a chance to meet with curatorial staff.

The Young Patrons' Circle (YPC) is a unique and intimate way for museum enthusiasts to experience the ROM. By making a philanthropic gift, young professionals (ages 19–45) enjoy an all-access pass to exclusive events and networking opportunities at the Museum. YPC members gain unparallelled access to ROM exhibitions, galleries, curators, vaults, and private collections.

This summer, YPC Patrons were among the first members of the public to preview *Ultimate Dinosaurs: Giants from Gondwana*. iPhones and iPads in hand, Patrons and guests tested the new augmented reality features of this stunning exhibition. "I particularly enjoy the shared interest in discovering arts and culture with a different pair of glasses," said Patron Claude Tambu. "I'm making a difference, one dinosaur at a time, which brings a whole new perspective to my membership in YPC."

Now in its eighth year, YPC welcomes Anna-Maria Kaneff as its new chair. Anna-Maria, who joined YPC in 2008, is involved in numerous charities and is director of the Credit Valley Hospital Foundation Board. She is a founding board member of the Grassroots Reconciliation Group in Uganda, serving as its CFO and a director of its board. The organization rehabilitates former child soldiers and helps reconcile them with their communities, establishing economic, educational, and community growth in northern Uganda.

She is vice-president of the Commercial Division for the Kaneff Group of Companies, a private Peel-based real estate company that develops and manages commercial, residential, and golf properties in southern Ontario.

Anna-Maria has long been a fan of the ROM. "I remember being at the Museum on a cold, wintery day when I was in grade school," she says. "I was fascinated by the mummies and the hieroglyphics and all of the offerings on Egyptology. That field trip to the ROM sparked a life-long interest in ancient civilizations and classical philosophy."

Visiting the Museum as an adult, Anna-Maria developed an appreciation for the diverse experiences it gave to visitors. "The ROM is unmatched by any other cultural institution in the city. It cuts across cultures and appeals to different age groups. Not only does it showcase groundbreaking exhibitions but it's also a living, breathing research institution with close ties to the University of Toronto—you name it, we have it at the ROM."

Anna-Maria was "honoured and thrilled" to take on the role of YPC chair. "I saw it as an opportunity to work with the fantastic ROM staff and enthusiastic patrons and to interact with curators in an intimate setting," she says. "YPC lets young professionals engage in the life of the Museum through special behind-the-scenes events. It's a great way to meet people who have similar interests, want to learn about science and history, and discover a different side of the ROM at night with a glass of wine in hand."

The Young Patrons' Circle program is a wonderful way to belong at the ROM. Learn more about this group and how you can participate at **rom.on.ca/ypc**.

Photo of Patrons' Preview of *Ultimate Dinosaurs* by A. J. Messier Photography.

A Futalognkosaurus-sized Thank You

Ultimate Dinosaurs: Giants from Gondwana, presented by investment dealer Raymond James, is a smash hit with visitors of all ages. This innovative exhibition in the ROM's Garfield Weston Exhibition Hall is based on ground-breaking research that takes visitors on an interactive journey through the ancient land of Gondwana to meet some of the world's strangest dinosaurs. Curated, designed, and produced by the ROM, together with our team of Canadian experts, including illustrator Julius T. Csotonyi, technology firm Meld Media, and dinosaur builders Research Casting International, the exhibition features the largest dinosaur skeleton ever mounted in Canada—*Futalognkosaurus*—so big we had to put it in the Hyacinth Gloria Chen Crystal Court! Special thanks to presenting sponsor, Raymond James; exhibit patrons, James and Louise Temerty; supporting sponsor, Bell; promotional partners, Cineplex and GO; and media partners, CTV and the Toronto Star. This ROM-originated exhibition will be moving to other international venues.

Don't miss the ultimate dinosaurs while they're still in Toronto.

Back to School at the ROM

As one of Canada's largest extra-curricular educators, the ROM welcomes more than 150,000 students each year from more than 3,000 elementary, secondary, and post-secondary schools in Toronto and across Canada. The generous support of our donors and corporate sponsors helps us give children magical and meaningful learning experiences at the ROM. Special thanks to the Linamar Corporation for establishing the Linamar School Visits Bursary, and to the Slaight Family Foundation for their investment in the Slaight Family Foundation Aboriginal Youth Engagement Program and the Ada Slaight School Visits Bursary. Sincere thanks to our generous corporate sponsors of the ROM's School Visits Bursary, including HSBC Bank Canada, Loblaw Companies Limited, Great West Life, Imperial Oil Foundation, and KPMG Foundation.

For information on how you or your organization can support educational initiatives at the ROM, please contact Jessica Wong at 416.586.5736 or jessicaw@rom.on.ca.

Observance and Memorial: Photographs from S-21, Cambodia *September 22, 2012–March 10, 2013*

This September, the ROM's Institute for Contemporary Culture (ICC) is proud to open *Observance and Memorial: Photographs from S-21, Cambodia*. This important exhibition is curated by the Photo Archive Group and by Dr. Carla Shapiro from the Munk School of Global Affairs at the University of Toronto. Special thanks to Susan Crocker, Ron Graham, the Honourable William C. Graham and Cathy Graham, Richard W. Ivey, and Sarah and Tom Milroy for their generous support of this exhibition. For information on how you can support this exhibition or to make a donation to the ICC at the ROM, please contact Britt Welter-Nolan at 416.586.5579 or brittw@rom.on.ca.

Thorny Skate

This shark relative is in steep decline in US waters but—for the time being—stable in Canada

BY MARY BURRIDGE

The ethereal beauty of this ROM specimen mystifies the inquisitive. Prepared using a procedure called clearing and staining, its soft tissues have been cleared using an enzyme to render them transparent, while the bone was stained red and the cartilage blue. Using this technique, scientists get a glimpse at the inner workings of the bones and cartilage, often helping to discover the identity and even the evolutionary history of the specimen.

This creature is a thorny skate (*Amblyraja radiata*). Skates and rays are close relatives of sharks, sharing similar traits, including external gill openings and a cartilaginous skeleton, hence the predominantly blue colour of this specimen. Skates are flattened fishes that live on the bottom of oceans and, less frequently, rivers. Their large pectoral fins, which are attached at the front of the head, are often referred to as wings, propelling them forward as they glide through the water.

The thorny skate is broadly distributed in the Atlantic Ocean. In Canadian waters, it ranges from Baffin Island in the north to the Gulf of St. Lawrence, the Grand Banks, and Georges Bank in the south. It supports a targeted fishery, that is, a harvest strategy designed to catch a specific group of fish, and although numbers are stable in Canada, a steep decline is occurring in US waters. It is designated as a species of special concern in Canada.

This image, by ROM photographer Brian Boyle, was a winner in the Professional Photographers of Canada Print Salon's Best in Class for Animals. ○

MARY BURRIDGE is assistant curator in the Ichthyology section of the ROM's Department of Natural History.

Photo: Ich076CS_ROM

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www.arabelladesign.com
Painting: Spera © 2006

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"The Art of Collecting Quality"

Lucius O'Brien R.C.A., "Hauling Logs" 1875, watercolour, 14" x 21"

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Joe Fafard R.C.A.
"Rousseau" 2006, ed. 7/7, bronze, 23.5" x 20" x 13"

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